THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

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begs most respectfully to thank the Metropolitan, Provincial, and Continental Gas Companies for their patronage for several years past, and to intimate that he has rebuilt and enlarged his extensive premises for the Manufacture of CLAY RETORTS; and that he is now prepared to execute the largest orders with punctuality and despatch. Orders for FIRE-CLAY RETORTS, of all shapes and sizes, FIRE-BRICKS, and all other Articles in Fire-Clay, executed on the shortest notice and on the most reasonable terms.

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Two Cast-Iron PURIFIERS, 8 feet by 4 feet 6 inches; 6-inch Connexions; four Tiers of Trays in each; complete with Wrought Sides and Travelling Lifting Carriage.

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The above are in good condition, and have been removed for the purpose of replacing with larger ones.

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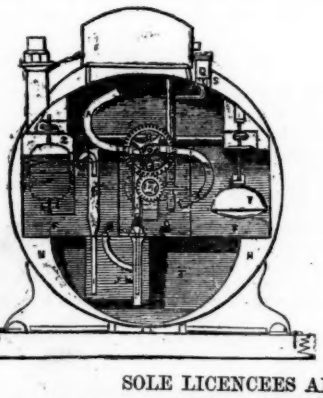

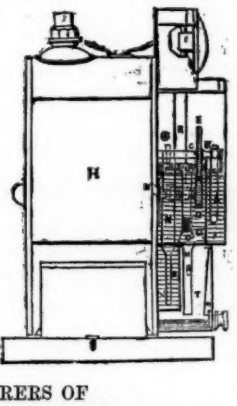

SOLE LICENCEES AND MANUFACTURERS OF
W. CROSLEY'S AND CROSLEY AND GOLDSMITH'S
PATENT STANDARD SELF-ADJUSTING AND COMPENSATING GAS-METERS,

By which the True Water-Line is constantly maintained, and accuracy of measurement at all times secured.

Manufacturers of LOWE'S PATENT MOTIVE-POWER METER, for situations where there is an inadequacy of pressure to supply the special requirements of certain consumers in low grounds during the day or night.

Also, Manufacturers of EXPERIMENTAL METERS, GASHOLDERS, GOVERNORS, MINUTE-CLOCKS, PHOTOMETERS, &c. &c., similar to those used by Mr. King, of Liverpool.

C. and Co. continue to manufacture ordinary WET METERS of the very best description, Mr. W. Crosley having been for many years the principal and confidential assistant of his relative, the late Mr. Samuel Crosley, of Cottage Lane, City Road, up to the time of his decease, in which capacity he communicated to W. C. the secret of the mixture of the metals which has rendered the Crosley Meter so durable and superior to all others, as is evidenced by a large number of them being still at work, after having stood the test of nearly a quarter of a century's use.

ONE PENNY NEWSPAPER

By Her Majesty's Royal Letters Patent.

JAMES MEACOCK,

MANUFACTURER OF

PATENT DRY AND IMPROVED WET METERS,

Also of every Description of Apparatus used in the Gas Factory, as well as in Gas Distribution.

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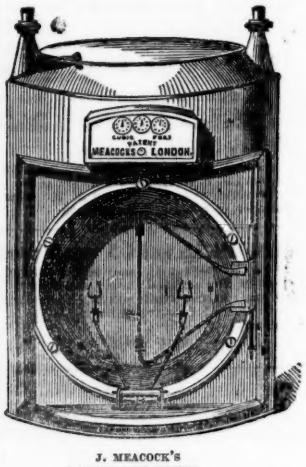
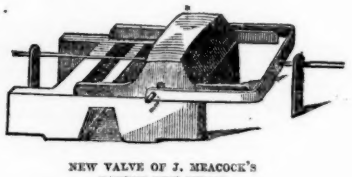
Established 1836.

PATRONISED BY ALL THE GAS COMPANIES OF THE METROPOLIS, AS WELL AS MOST OF THE PROVINCIAL TOWNS.

J. MEACOCK, in returning thanks for the liberal favours he has received, most respectfully calls the attention of those interested in Gas Lighting to the improvements of his DRY METER, which has obtained HER MAJESTY'S ROYAL LETTERS PATENT, and which contains all the desired requisites for simplicity, durability, and faithful registration; also to his improved WET GAS-METER, which all the leading Gas Companies have been pleased to patronise; and begs to solicit the continuance of their commands for the above, as well as *Experimental and Station-Meters*, Pressure-Indicators, Governors, Gauges, Photometers, and every apparatus in use by the Gas Engineer, which he will warrant of the very best materials and workmanship, and at most economical charges.

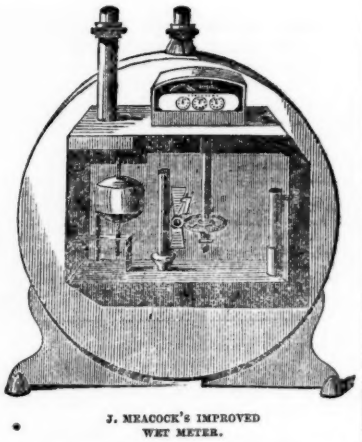


J. MEACOCK'S PATENT DRY METER.



NEW VALVE OF J. MEACOCK'S PATENT DRY METER.

OLD VALVE OF THE ORDINARY DRY GAS-METER.



J. MEACOCK'S IMPROVED WET METER.

In the above Diagrams of Meters will be seen J. MEACOCK'S patent method of securing the Leather Diaphragm of his IMPROVED PATENT DRY METER. Instead of using the soldering iron for the purpose, by which the Leather is more or less injured, it is held between two flat Metal Rings, and screwed up sound on to a frame to receive it, the outward rim of which and screw-heads are shown in the drawing.

The Valve adopted in the above Patent Meter is also shown, as well as the ordinary Slide-Valve; the advantages of the former in not rising from its facing will be very apparent to the practical Gas Engineer, to whom it is of vital import.

WET GAS-METERS REPAIRED AND RECONSTRUCTED WITH J. MEACOCK'S MODERN IMPROVEMENTS.

J. MEACOCK begs leave most respectfully to submit to the notice of Gas Companies his PATENT DRY GAS-METER, trusting thereby to receive the same encouragement that has been so kindly awarded him in respect of his Improved Water Meter, which has been patronised by all the Metropolitan Companies, as well as most of the Provincial Gas-works.

The public having been induced to desire Dry Gas-Meters in preference to Wet, and many Gas Companies being willing to yield to their wishes, if a correct measurer, not liable to fluctuation of registry, of good materials and workmanship, and when repair was necessary, of being put in order by simple means, J. M. has been induced to apply himself to the production of a Dry Meter, possessing those requisites, for which he has obtained her Majesty's Royal Letters Patent.

It is not generally known, but very frequently in fitting up the ordinary Dry Meter, the leather of the diaphragm is destroyed during the process of soldering, by coming in contact with the hot soldering iron. In his present process, J. M. has done away with its use, no solder being necessary, the leather being secured by two flat metal rings, between which it is screwed, rivetted, or overlaid; the perishing effect of hot tools to leather being avoided, its durability must be longer; also, by this means, its repair when needful is most simple, as a new leather diaphragm can be applied by merely unscrewing the old one from the rim or frame to which it had previously been screwed up sound.

In the ordinary Dry Meter frequent variations of registry have been detectable from defective valves, which tilt or rise from their facings: the slide-valve of this Patent Dry Meter will not allow any carbonaceous matter common to coal gas to tilt or lift the slide from its facings, and hence no variation. It will be found not only a correct measurer, but free from fluctuation.

The heavy wear and tear to which the Meters of Gas Companies are subject, have at all times made it desirable to have them of the best materials and workmanship. Unfortunately, in the greater number of the ordinary Dry Meters, neither of these requisites were carried out, for, as they were not to contain water, most inferior workmen and materials were employed in their construction. J. M. begs leave to assure those who may honour him with their commands, that nothing but the stoutest materials for cases, the hardest gas-resisting metals, and best foreign leather for the interiors, will be used, and none but first-class workmen employed in their construction (the properties which his Improved Water Meter is well known to possess, and which has obtained him that extensive patronage), will be strictly carried out in his PATENT DRY METER.

In respect of any orders with which he may be honoured, he is willing to give a stamped guarantee to keep the same in repair, *free of all charge*, for five years, and allow the customary discount off the original list price.

J. M. has annexed diagrams of his Patent Dry, also of his Improved Wet, Gas-Meter. In the former will be seen his patent mode of securing the diaphragm. The former and present valve are also shown, and the advantages of the latter will be, by practical persons, easily understood.

METERS SENT ON APPROVAL.

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NOTICES.

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All Communications to be addressed to the Editor, No. 42, Parliament Street, Westminster; and orders for Advertisements to Mr. W. B. King, the Publisher, No. 11, Bolt Court, Fleet Street.

THE JOURNAL OF GAS LIGHTING, WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, JULY 21, 1857.

The Offices of the Editor of this JOURNAL *are removed from No. 3 to No. 42, Parliament Street, in consequence of the former being required for the site of the projected new Government Offices.*

NOTES UPON PASSING EVENTS.

WHAT can be the meaning of the leading members of the Government in the extraordinary proceedings connected with the General Board of Health Bill? Evidently, it is now too late in the Sessions for any serious examination of a subject of importance, such as the sanitary legislation of the country really is; and so, as the pay and patronage of the General Board of Health are necessary for the political purposes of our existing "strong Government," we may expect that some temporary measure will be forced upon Parliament for the continuance of the above-named mischievous organization, or that some manœuvre will be resorted to for the purpose of surprising Parliament into the recognition of its existence in a permanent form. It seems to be of about as much use to appeal to the common sense of the Government, or of independent members of either House, in order to insure an investigation of the composition of the General Board of Health, or of its past history, as it would be to preach to the concrete of Sir B. Hall's favourite basin; and perhaps it may be absurd to expect that our legislators should examine any detail of home government whilst our external relations are in the very perplexed and disturbed state they now unquestionably are. The "peace at any price" party having been set aside by the late unequivocal expression of public opinion, we have been gratified with such a succession of wars, little and big, civil and foreign, that attention has been effetually diverted from domestic affairs. Perhaps this entered into the calculations of the more wily of our diplomatists; and they may have counted upon the turmoil and confusion of late years for furnishing the means of concealing the insidious steps by which our administration has extended itself on all sides, and has to a great extent succeeded in centralizing in its own hands many of the powers formerly exercised by local authorities. Such has been the usual course of events in other countries, at least; and without entering here into a disquisition upon the philosophy of history, we may observe that there does not seem to be any probability that an exemption from the natural laws of political events should be made in our favour. The attention of the nation is, in fact, just now fixed earnestly, and with fear and trembling, on the state of our Indian possessions; and, under cover of this excitement, it is possible that we may overlook the steps by which the modern Old Man of the Sea—red tapeism—is striving to fix himself upon the shoulders of the taxpayers.

In season and out of season, however, we, of this JOURNAL, have striven to keep before the public the incompetence and the mischievous folly of the General Board of Health. Even now, though we fear it is too late, we again go out of our way to protest against the doctrines of that board with respect to drainage, water supply, municipal organization, and sanatory police; and we call upon the Legislature to pause before it again entrusts the weight and influence of its tacit approval to theories which have been shown to be false, and to practices which have been proved to be fatally injurious, in every case where they have been applied. Emphatically do we declare that it is the bounden duty of Parliament to inquire into the manner in which the new branch of the administration, created by the Public Health Act, 1848, has performed the duties entrusted to it; because we are convinced that few amongst our law makers are aware of the follies and jobbery of which it has been guilty. Under any circumstances—even if our earnest appeals to the justice and common sense of Parliament be founded upon a mistaken view of the conduct of the General Board of Health—it is desirable that a real and an impartial investigation into the matter should be made; for a Government can never allow one of its departments to be publicly and frequently accused of incompetence and jobbery, without suffering in every other department. As to the investigation before Sir B. Hall's committee, we repeat that it was little better than a farce; because it must have been evident that the President of the General Board of Health was not likely to have allowed his own office to be put upon its trial. Nothing but a searching inquiry into the working of the Public Health Act, and into the principles which ought hereafter to regulate our sanitary legislation, will satisfy the minds of those who are able to reason upon these matters; but it is sadly to be feared that our present rulers, who like "to make things comfortable," will continue as they hitherto have most artfully and carefully done, to avoid an investigation which, we assert beforehand, would expose the misdeeds of their subordinates.

There seems to be some fatality which thus urges our Government to throw itself into the hands of a class of men who may be called, without exaggeration, bold quacks. We have seen it, some time since, rush into Darien expeditions on the faith of reports which alone ought to have convinced its professional advisers that the originators of that scheme were utterly unworthy of being listened to. We see that it is about to compromise itself to the Euphrates Valley Railway, on the faith of General Chesney's survey of the lower parts of that region, although the officers of the late Persian expedition have declared that survey to be practically worthless; and although it contains assertions which are in direct contradiction to all the laws of hydraulic science. We have this week learnt that the boasted soundings of the bed of the Atlantic, which were appealed to as proving it to be perfectly level, are in all probability false; whilst there appears to be very good reason for suspecting that the evidence upon which our Government has been induced to place itself in direct opposition to the Isthmus of Suez scheme is incomplete and unsatisfactory. Yet Lord Goderich and his friends clamour for competitive examinations for places of landing-waiters, &c.! Why should not Secretaries of State be examined in the sciences connected with their various departments? or must we admit that it is impossible to establish a test of the merits of those to whom the happiness of countless millions is entrusted, whilst it is essential to require from a class of men but little superior to our day

labourers the possession of a refined education? There is an anomaly in our practice in these matters; and, indeed, it is to be suspected that the blunders of our Government may be attributed to the laxity with which we, as a nation, admit claims to political eminence, whilst we are exacting over much from our subordinate and underpaid agents.

Even Mr. Wilson himself does not appear to be free from blame on the score of the unsatisfactory manner in which he presents his attempts at legislation to the House of Commons. His bill for regulating insurance companies, at least, is as open to grammatical and legal criticism as any of even Sir B. Hall or Mr. Cowper's bills were. For, in the title of this measure, the same omission of the qualification "human" life, as the object of some of the insurances to be effected, would open the door to as much litigation as the omission of the same word in the Stamp Act has already done. But we call the serious attention of members of Parliament to Clause 10 of Mr. Wilson's bill, because, by it, new shareholders would have conferred upon them a limited liability for some debts of the companies, whilst the old shareholders would have an unlimited liability for the same debts, under circumstances which would not give them a corresponding influence in the direction. We object also to the partial obligation of insurance companies to register their accounts. Such an obligation should exist for all companies or for none; and for our parts, we can see little good to be obtained from it, under any circumstances—unless it be to make work for the Registrar of companies.

The ordinary gas and water legislation of this Session does not present any subject for observation, and we are thus enabled to watch with a more undivided attention the conduct of government boards and public bodies. Yet there is little to be recorded of them beyond words—words! We may shortly expect that the commission to whom the magnificent "filicidal" President of the Board of Works referred the scheme for intercepting the sewerage of the metropolis from the Thames will make their report; and already we fancy that we see an opposition on the part of the Metropolitan Board of Works, "looming in the distance." Time will solve this mystery; but most seriously do we call the attention of the ratepayers of the metropolis to the bitter joke Sir B. Hall has played at their expense, by stopping any progress of this great work for nearly two years. If the want of the age be "good administration," we fear that our present rulers are not the men to supply it; or, at any rate, the brilliant success of Sir B. Hall in discovering the solution of the problem, "how not to do the metropolitan drainage interception," ought to make the public reflect seriously before it increases his power for mischief. For we repeat that the practical result of Sir B. Hall's interference with the operations of the Metropolitan Board of Works has hitherto been simply to retard its useful action. The river is fouler than ever, and any one who had the misfortune to travel upon "the silent highway" about the turn of the tide on Saturday last, must have noticed a state of things unparalleled, except in the Dutch canals or in the old port of Marseilles. Nothing has been done towards the creation of new parks in the metropolis; and the street improvements projected by the Metropolitan Board seem equally suffering under the "cold shade" of administrative interference. By the way, the taxpayers seem now resolved to take the question of forming new parks into their own hands, for some influential meetings have been held in Bermondsey and in some other parishes on the south side of the river. This is as it should be, despite Mr. Leslie; and we urge the ratepayers to continue their present course of action. "*Aide toi, le ceil t'aidera.*" In the meantime, we may, perhaps, be allowed to congratulate the parish of St. George, Hanover Square, on the position assumed by its representative at the Metropolitan Board of Works. Cobblers are not the only people who might be advised to stick to their lasts.

Some actions have recently been decided by the Courts of Quarter Session which prove that the old and constitutional tribunals of the country are sufficient to protect the public health from noxious trades, without the officious intervention of the Home Secretary, or of any common policeman, to whose tender mercies Sir B. Hall proposed to consign the manufacturing interests of the metropolis. The manufacture of artificial manures in the open air has, for instance, been declared to be a nuisance in densely-peopled parts of the town; and really everybody who passes through some parts of Bermondsey must agree that the conclusion then come to was a very correct one. Such a decision, however, proceeding as it does from such a tribunal, has an importance of the most serious kind; because it was arrived at after a full and fair trial, and by a jury of men of the same walk in life as the parties accused, instead of having been given by a nominee of the Home Office, who would hardly dare to oppose any crotchet of the Minister of the day. We hope that an appeal will be made against the magisterial decision in the case of the Patent Seamless Leather Company, near Farringdon Street, so as to bring that case also before the Quarter Sessions; because the opinion of Dr. Letheby, upon which it is based, is founded upon assumptions which are notoriously incorrect. Thus Dr. Letheby, quoting, we suspect, from the style of his evidence, certain French books, says that tanneries require to be in the open air; to have abundant supplies of water; and that they are nuisances in densely-peopled neighbourhoods. This is only partially true; for it is not only possible to carry on a tannery in the most densely-peopled part of a town, but we could actually point out a tannery so situated, which is conducted with such care and skill, that no casual observer, however sharp his sense of smell might be, would suspect its existence; and the quantity of water required must vary greatly with the process adopted for treating the hides. Dr. Letheby is usually very cautious in his assertions; but he seems to us to have forgotten his wonted reserve in the report he presented against the parties interested in this particular case.

We have heard that Lord Palmerston's commission for inquiring into the application of town sewerage is discussing the propriety of visiting the *marcite* of Milan. Before they do so, however (at no small cost of time and money), we would urge them to consult the works of Columbani, Nadault de Buffon, and Baird Smith, upon Italian irrigation; for we can assure them that they will find in those books all that is known upon the subject, and far more than they themselves, who are neither engineers nor Italian scholars, could actually learn on the spot. But, alas! this commission is like all the others we have been afflicted with of late years. It has to decide a question which is as much engineering as it is agricultural; and yet it does not number in its ranks one independent, or one eminent, engineer. How the shade of "Figaro" must rejoice in our present ministers! "They require the advice of mathematicians, and they take dancing-masters," just as in the days of Beaumarchais.

Our readers will find in another column a short notice of the decision in the case of Chasemore and Watney *v.* the Local Board of Health of Croydon. Perhaps, somebody would be so kind as to ascertain the amount of good Croydon has received from its connexion with that branch of the administration. Why do not the members for West Surrey inquire into the matter? Croydon and Epsom are very near one another, and their mishaps have been nearly equal.

Since the first part of these "Notes" was in print, we have succeeded in obtaining a copy of Mr. Cowper's last "Public Health Act, 1848, Amendment Bill," which stands for second reading this evening (Monday), though the bill itself, 78 pages long, was only to be obtained by the public this morning, and was actually presented to Parliament for the first time on July 15. Of course it is impossible, within so short a period, to examine a measure of such importance; and, in the name of the manufacturing, the water, the gas, and the landed interests of the country, we at once protest against the disgraceful delay which has taken place in submitting it to the consideration of the Legislature. Here is a bill affecting nearly the whole property of the country, itself containing 181 clauses, and incorporating portions of it is impossible to say how many Acts, presented for the first time to the House of Commons in a printed form on the 20th of July, although it is notorious that it has existed in a perfect form in the Government Offices for many months. Most distinctly do we proclaim our belief that this delay has been resorted to for the express purpose of avoiding discussion; and we do contend that it is unfair and discreditable for the Ministry thus to attempt to trick Parliament out of its consent to a bill which does not, so far as we can yet perceive, remedy any of the acknowledged defects of the Public Health Act, 1848. What a farce legislation appears to be becoming! The Houses of Parliament have only to register the jobbery of Ministers or to screen the blunders of their subordinates.

As to the portions of Mr. Cowper's new bill of a nature to affect the property of gas or water companies, we can only at present say that all the defects of the Public Health Act are retained, and new powers, unfavourable to companies, are

given. Clause 92, especially, should be read with reference to our remarks on the Dover water case, and to the legal proceedings which have taken place elsewhere between Local Boards of Health and Water-Works Companies. Clause 95 at once enables any local board to establish an opposition to any existing gas company; and many of the minor arrangements of the bill appear to have been drawn up in a spirit of direct hostility to the interest of existing companies. Most earnestly do we call upon the Directors of the latter to exercise all their influence in order to secure at least a fair examination of a measure to them of such vital importance. Again and again we repeat that the Government has hitherto carefully avoided any such examination; and we submit to all independent members of the Legislature that this anxiety to avoid discussion ought alone to make Parliament suspect that there must be something seriously wrong in the system of mystery with which it is connected.

THE GAS QUESTION AT MARSEILLES.

People who are fortunate enough to make more money than they spend, are often sorely puzzled to know how to invest their savings. English capitalists seem to be especially troubled in this way, and not finding enough safe or profitable investments in their own country, they have in many cases transferred it to others, and have thus conferred upon foreigners the benefit of their capital and experience, trusting to the universal spirit of justice, or to the law of the land, for the defence of their property. We are bound to confess that, as a general rule, foreigners are treated with tolerable fairness by the tribunals of the most enlightened nations of the continent; and that the recent absurd interference of our legislature with industrial operations in England have tended to create a preference for (amongst others) public companies in France. It is with regret, therefore, that we perceive our neighbours occasionally cast aside the principles of equity they so usually observe; and that our feelings of confidence in French investments are exposed to such shocks as those which must be produced by the conduct of the Municipality of Marseilles towards the Imperial Continental Gas Company, and by some recent decisions of the Conseil d'Etat, and of some minor law courts, in the suits affecting the rights of gas companies after the expiration of their contracts for public lights. As this tale may convey some useful lessons to parties about to invest capital in France, we have treated it at some considerable length, following in all its essential points the account given in our contemporary, *l'Union Continentale*.

It would appear that the first works executed at Marseilles for the purpose of lighting that town with gas dated about the year 1837; and that, for a short period after that year, a very violent competition was carried on between the four companies then established. Two of these companies failed, and an understanding seems to have been effected between the survivors by which they ceased their ruinous competition. For many years the municipal authorities of Marseilles and the Continental Gas Company, one of these survivors, worked together in a manner as advantageous to the interests of the public as to those of the shareholders in the company; and in 1841 a new contract for lighting the town was entered into by the latter, upon terms which were considered satisfactory to all parties. But it is essential to observe that in this, as in most French contracts of the same description, the price of gas to the town was fixed at a rate notoriously unremunerative, and the company was allowed to recover the loss so occasioned by charging an unfair price to the private consumers, the price to the public being fixed in fact at 19 centimes per metre cube, and that to the private consumers at 46 ctms. This contract expired in 1854; but, in the meantime, the Continental Company had been compelled to reduce the price it charged to its private consumers to 36 ctms. per metre cube; and the proportion between the public and the private lights was such as virtually to reduce the average price of the gas delivered by the Continental Company to 29·71 ctms.; although, of course, the rival companies, which were not burthened by the public service, enjoyed the benefit of the full price to private consumers of 33 ctms. per metre cube. In 1854, negotiations were opened for a new contract, and a temporary arrangement was made, by which the Continental Company continued the supply of the public lights for one year, at an increased price, but subject to revision, or even to reduction upon the completion of a regular contract. In 1855, the Mayor of Marseilles sent a very abrupt and ill-tempered letter to the Company, requesting the latter to state the terms at which it would continue its services; and when the company offered, in reply, either to supply gas at the rate of 36 ctms. per metre cube for one year, or at that of 25 ctms. per metre cube for ten years, the Mayor curtly accepted the former proposition.

During these negotiations the Continental Gas Company and the other establishments of the same nature existing in Marseilles, appear to have come to an understanding for the purpose of ceasing their mutual opposition, and for making favourable propositions for lighting the town; in consequence of which a provisional engagement was entered into between the municipality and the amalgamated companies (represented by M. Vautier) by which the town was to pay at the rate of 20 ctms. for the public lights, and the private consumers were to pay 40 ctms. This engagement was, however, entered into in 1855, just at the time that the City of Paris made its bargain at the rates of 15c. and 30c. respectively; and the prefect of the department in which Marseilles is situated thereupon refused to sanction it. Shortly afterwards M. Mirès offered to undertake the lighting of Marseilles at the same prices as ruled in Paris, and the Municipal Council at once closed with his offer. M. Mirès was not able to commence the delivery of gas at the period he had contracted to do so, and the town was obliged again to resort to the company it had so unceremoniously endeavoured to set aside; but, directly the new contractor was in a position to fulfil his engagement, the Mayor, officially, ordered the Continental Gas Company to pull up its pipes; and, upon their appeal against his order, he seems to have proceeded violently to destroy, or to remove, the pipes in question.

Now, we are hardly able to decide whether, or not, there be any justice in the accusations brought by the Mayor and Town Council of Marseilles against the Continental Company, which are flatly contradicted by the latter, we may at once add. There has evidently been so much temper in the matter hitherto, that we should be prepared to hear that there have been faults on both sides; but, unquestionably, the Mayor of Marseilles has proceeded to such extremities, and has destroyed the property of the Continental Company in so reckless and arbitrary a manner, that we feel that, if he be countenanced in his proceedings by the Council of State, there would be no security for the capital, whether native or foreign, exposed to the attacks of local administrations in France. Of course the Municipality of Marseilles was entitled to obtain its gas at the lowest price, and it was justified in according to M. Mirès the permission of opening the streets to lay down the pipes for his contract. But, in face of the decisions of the Conseil d'Etat in the cases of the companies of Vaise and of Grenoble, in which it had been ruled that the termination of a contract for lighting the public lights did not affect the right of gas companies to continue to use their mains for the supply of private consumers, there was an evident stretch of power on the part of the Mayor of Marseilles, in the adoption of the extreme measure of pulling up, or destroying, the mains of the company with which he had quarrelled. No doubt it would have been impossible for the latter to have continued for any length of time their service, in open contest with the municipal authorities, whose consent they would be obliged to secure for every one of their repairs. But the utter helplessness of the company in this respect only makes the arbitrary proceedings of the Mayor the more revolting. It would have been both fairer, and more worthy of a public officer of his importance, if the Mayor had allowed the company to have wound up its operations gradually; but, unfortunately, he had committed the blunder of guaranteeing to M. Mirès the exclusive right of supplying gas in the town, which the previous decisions of the Conseil D'Etat show that he had not the power of doing at the time; and in order to carry out this unfair arrangement, he has been compelled to resort to measures of violence and injustice. This quarrel is connected, we would, however, observe, with so many questions of administrative and municipal law in France, that we hardly like to express a very decided opinion upon the documents we have yet perused with respect to it. We propose, therefore, to examine the subject carefully, and to return to its consideration; for the recent proceedings at Marseilles seem to us to throw such uncertainty over all property, of the description alluded to, as to require the most anxious investigation. The great question, in fact, involved is this: have industrial operations any protection against the abuse of the administrative powers of France? As we understand the matter at present, they have none; and the Imperial Conti-

nental Gas Company has been made the victim of the tyranny of the Mayor and Town Council of Marseilles, in a manner which is so disgraceful to the public authorities and to the administration of justice in France, as to justify us in warning all parties who have property invested in that country of the danger to which they also are exposed.

Circular to Gas Companies.

Now that the question of the price of gas has, with few exceptional cases, been satisfactorily adjusted throughout the length and breadth of the empire, the question, "What are we to do with our coke?" has become of almost paramount importance to the gas manufacturer. Experience has demonstrated that the demand for coke has not kept pace with the consumption of gas, and, in spite of the active canvassing of shareholders and their friends in their own limited circles, the markets for coke are everywhere glutted to such an extent that, when the stores become filled, the brick and lime burners clear off the surplus on ruinous terms. Numerous expedients have been suggested for the remedy of this state of things, and many of them have been tried with partial and very dubious success. Some of the large producers have sought distant markets in the manufacturing districts, to the manifest injury of the local gas-works. Others have reduced their price to such an extent that, though they may have doubled the quantity sold, the total return in money has not much exceeded what it was at the higher rate; indeed, the consumption for domestic purposes appears to have reached its limit in most places in this country, and to be incapable of any important extension even by material reductions in price. On the other hand, several gas engineers have directed their attention to the perfecting of some system by which the yield of gas from a given quantity of coal can be considerably increased, and the production of coke be thereby diminished, whilst others have proposed so to improve the quality of the coke itself, as to allow of its being used for locomotives and metallurgic purposes. The patent taken out by Mr. Croll on Jan. 3 last, in which he proposes to introduce a stream of small coal or dust into an inclined retort by means of a self-feeding apparatus, is an example of the former; and, if this system is successfully established, it would diminish by one-third the coke produced in our large gas-works. Our neighbours across the Channel, who are suffering under the same difficulty as the English gas manufacturers, have particularly examined the question of the possibility of collecting the gaseous products of closed and externally heated coke ovens, and have succeeded in obtaining a coke greatly superior to that made in the ordinary ovens; while the gas, according to the report of M. Regnault, the distinguished chemist, is in no perceptible degree inferior, either in quantity or quality, to that obtained from the same coal by the ordinary process of distillation. This is unquestionably a step in the right direction; for, if the great railway companies become large consumers of coke from which the gas has been collected, the question which at present perplexes the gas manufacturer is solved, and the marked relieved of the incubus under which it is now weighed down. London, with its numerous important railway *termini*, is admirably situated for the development of such a system, and, if it has succeeded in Paris, we can see no reason why it should not also succeed in London, under proper management. Gas companies will not be permitted to extend their works without limit in the crowded and densely-populated portions of the metropolis; and, for ourselves, we should infinitely prefer seeing new works erected on really sound principles away from human habitations, than to witness the tinkering of old works year after year, which it requires no great stretch of foresight to predict must ultimately give way to the growing requirements of the age. Let any one who doubts this go to Paris, and judge for himself of the immense improvement effected by the suppression of three works in that city, and the erection in their stead of one large work on an advantageous site outside the barriers, and abutting on the principal railways and canal by which coals are conveyed to Paris.

The experiment about to be made in the conveyance of coal by leviathan screw-colliers is watched with much interest by all consumers of the commodity, and more especially by the metropolitan gas companies, as expectations are held out that half the present rates of freight will be remunerative, and, if this prospect is realized, it will revolutionize the whole gas-making trade of London.

Correspondence.

THE ADULTERATION OF FOOD MOVEMENT.

Sir,—I can but acknowledge the efforts you are making to arouse the attention of the trading and manufacturing interests to the attempts of the Legislature to interfere injuriously in their various concerns, though I conceive you are wrong in attributing those measures to ministers. Many of the most absurd and injurious schemes originate with independent members; and in your last number you mention Mr. Scholefield, who represents one of the most populous towns in England. Surely his constituents ought to know what he is about, and one can see no necessity to abuse Lord Palmerston or his subordinates, who have plenty on their hands, without being charged with other men's blunders and schemes.

Here, again, is Lord Raynham, with a "Cruelty to Animals Bill," which may punish a man for killing bugs and flies, fleas, &c. This young nobleman is 26 years old; did he consult his Tamworth friends? have they no vermin there?

Now, abusing Lord Palmerston or Sir G. Grey is putting the saddle on the wrong horse. The common sense of constituents ought to put their members on their guard against ridiculous measures; but the fact is, that, although centralization is objected to, there is a general tendency that way. Some evil is felt; independent members bring crude and ridiculous measures forward; then, after these fail, every one says, "It is a public evil; ministers ought to take it in hand." They are compelled, therefore, to carry it out in the best way they can.

Now, *per se*, nothing can be worse than adulteration in food, or anything that goes down the stomach; and I believe the *Lancet* was the first to commence the crusade, without perhaps considering that adulteration in *drugs* is even of more importance than in food: but to persecute bakers, millers, and grocers is a popular expedient—chemists and druggists not so, though an *overdose* may *do* for you, and an *underdose* render you no service.

The system is already at work; for a baker in some town has been fined for putting alum in his bread and having alum on his premises. No proof was attempted that anyone's health was injured thereby: he might have been singled out to gratify some person's malice, or to reward a common informer or excise officer.

When a young housekeeper, I had a large family, and, for economy's sake, we made our own bread, in which none of the awfully bad things supposed to be in bakers' bread had admittance; and yet, strange to say, my wife, who had not very robust health, could never eat her own bread, but preferred the poisonous compound made by the baker. And my children, when they grew up and became housekeepers themselves, invariably preferred bakers' bread. The same with regard to coffee, some kinds of which are disagreeable to many palates without chicory.

Where is flavouring to end and adulteration to begin? A little water to a great deal of brandy is adulteration: a great deal of brandy to a large quantity of water is a mixture! A foolometer here is much wanted.

Our Government are compelled to lick into some shape the crude undigested bills of various members; and, being very indifferent about their fate, give themselves as little trouble as possible: in fact, those who originate new laws ought to give them more consideration, and see that they do not create more evil than they remove.

W. A. H.

COAL TAR A REMEDY FOR THE VINE DISEASE.

Sir,—Herewith, I beg to enclose you a copy of a communication on the "Vine Disease," addressed to the Portuguese, French, and Spanish ambassadors.

Holmpton Lodge, July 1, 1857. John Malam.

(Copy.)

To his Excellency the Count de Lavradio.

Sir,—The calamity which England and the Continent experienced a few years ago from the potato disease, induced me to turn my attention to its cause and prevention.

After duly studying the history and nature of the disease, I felt convinced that the origin of the mischief existed in the soil and air. The low state of vitality in the plant, as exemplified in its susceptibility to the meteorological changes of the atmosphere, I considered due to a deficiency in those constituents of food essential to its well-being; hence the partial exhaustion of the powers of life, which dispose it to the invasion of fungi, &c.

A series of careful experiments and observation of facts only confirmed those views, and I flatter myself that the practice founded on the principles enunciated by me in a pamphlet on the potato disease (and which I have the honour to enclose), materially conduced to the immediate mitigation, and in many districts to the entire disappearance, of the disease. I was ultimately led to the belief that similar conditions of soil and air were influencing the vineyards of Portugal and other countries; and, after numerous successful experiments in vine-cultivation, and which, moreover, have been proved by the testimony of others, I am induced to send your excellency the following communication, of which you are at liberty to make such public use as may be deemed expedient.

About three years have now elapsed since I pointed out the

benefit of antiseptic carboniferous manures in the prevention of vine disease. The *oidium*, in my opinion, will not attack plants vegetating in a state of perfect health, and growing in a soil of an antiseptic character suitable to the nature of the vine.

The bad effects of a putrescent soil are exemplified in the condition of the plants; they become weak from being unnaturally forced, they are in a disordered condition, containing decomposable albuminous matter, unable to bear those atmospheric changes which occur in unfavourable seasons, and, consequently, they not only do not bear fruit to perfection, but become liable to disease. Amongst the conditions I consider to be quite essential, or of primary importance, to the well-being of the vine, are supplies of potash and carbonic acid. Potash is requisite in the soil for the formation of wood, leaves, and fruit, and although vines may be hastened in their growth by nitrogenous manures, and their produce and development may be increased by them, yet, after a few years (that is, as soon as the potash has been exhausted in the soil), the vine will be found to cease to be productive.

The flavour of grapes is deteriorated by the use of putrescent manures, which stimulate the vine too highly and cause an excessive and unnatural growth of the wood, which, being formed too rapidly, becomes long-jointed, and productive of leaf-buds instead of flower-buds.

Boussingault found that vine leaves enclosed in a glass globe removed completely from the air all the carbonic acid contained in it, however rapidly the stream of air was made to pass. Liebig states, "We may feel assured that all the alkalies contained in the vine, potato, and beet, and found in the juices, united with tartaric, oxalic, and malic acids, are not merely present for the purpose of being used in druggists' shops, or in our households, as acid or neutral salts."

These inorganic acids must be necessary for the formation of certain constituents in the plants. We have already come to the conclusion that the carbon of all plants is derived from carbonic acid; tartaric, oxalic, citric acids, &c., must, therefore, obtain their carbon from the same source. Both these essential elements are supplied by antiseptic manures, amongst the best of which, I consider, wood ashes and gas tar; the former supplying the potash, and the latter the carbonic acid. The wood ashes, when used, are simply at once dug into the soil. The coal tar, on the other hand, requires to be poured on the surface of the soil, and then turned over with a fork occasionally, so that it may gradually decompose, and in this state reach and be absorbed by the rootlets. The antiseptic qualities of coal tar, and its fertilizing properties as a carboniferous manure, are but imperfectly known to agriculturalists and horticulturalists, many of whom erroneously suppose it to possess properties identical with those of gas water. As coal tar is one of the constituents contained in coal, which latter is of vegetable origin, and having been received from the atmosphere and soil as food for plants ages ago, I conceive it to be a very natural food for vegetation at the present period. The antiseptic carboniferous and ammoniacal products distilled from coal appear to me to be far better calculated to conduce to a healthy growth of plants than the putrescent, fœtid, nauseous, undecomposed, animal and vegetable matters in use at the present time, which latter favour the attacks of fungi and insects. Coal tar, being practically destitute of nitrogen, furnishes a supply of carbonic acid to the roots of plants, whilst the other product, gas water, is very valuable as an ammoniacal manure, especially for cereal crops, from the nitrogen supplied by it to vegetation. It is evident, therefore, the coal tar is valuable as an antiseptic carboniferous manure, and gas water as a nitrogenous manure. I have found by experience coal tar mixed with farm-yard and stable manures very beneficial for oats, melons, cucumbers, &c.; and, when dug into the rows before planting potato-sets, a preventive to the disease. It is a singular fact, that the antiseptic properties of volatile hydro-carbons of coal tar have, in numerous instances, not only prevented the ravages of the vine and potato diseases, freeing the former in vineries from red spider, but have also prevented the ravages of cholera.

As corroborative testimony to the value of these experiments, I may refer your excellency to the "Year-book of Agriculture" for 1855 and 1856, on the "grape dew," at page 195, as follows:—"M. Dido pointed out the absence of the *oidium* on the vines, the wood of which had been smeared over with coal tar. M. Sandette proposes a simple and inexpensive preservative, which proved successful in some experiments made during two years in the neighbourhood of Bordeaux. In order to prevent and arrest the development of the *oidium*, it is sufficient, three weeks after pruning the vine, to smear the stem and shoots with liquid tar, applied with a brush. This operation costs very little, and has proved very successful on all plants in which it has been performed, even although they were in the midst of infected vines."

In the *Gardener's Chronicle* of May 16, 1857, at page 345, a correspondent points out also the advantages of coal tar in preventing the attacks of red spider, as follows:—"The day following putting my leaves in a pit, the whole place seemed alive with red spider, but after placing one or two gallon saucers with a little gas tar in them on the leaves, not a spider was to be seen the following morning, nor indeed has one appeared since."

Having thus treated of the defects of the soil and their remedies, I will now give my views of the state of the atmosphere when most prejudicial to vines. The excessive presence of ozone (oxygen in a concentrated state) in the atmosphere, at certain periods, is most injurious, producing oxydizing effects upon most organic compounds, and causing diseases both in the animal and vegetable kingdoms. Dr. Moffatt, from meteorological observations at Hawarden, in Flintshire, has found that the maximum of ozone corresponds with the atmospheric conditions which give the maximum of diseases. If ozone, then, in a warm, moist atmosphere charged with it, has such an influence in causing disease in the animal kingdom, need we wonder at its causing disease in the vegetable kingdom? It is a well-known fact that the vine and potato disease are more prevalent, and the quantity of ozone is greater, on the coast than inland. The English troops encamped on elevated ground at Varna escaped the ravages of cholera until a violent thunderstorm came, when the majority of them were seized with it. Mr. Forrester, in a letter to the *Times*, stated that, by the end of July, another visible change took place in the vines of the Alto-Douro; the few grapes which had escaped, but which had become quite hard, began to increase in size, and to be less affected by the *oidium*, when a severe thunderstorm swept away at least two-thirds of the remaining fruit, and the ligneous part of the branches, and even the tendrils became stained with a variety of leopard-like spots of various hues, while the healthy colour of the leaves remained unchanged.

The potato disease, after a thunderstorm, has, in hundreds of cases, first manifested itself; and I believe it is an admitted fact that, wherever cholera has raged amongst us, it has been found that the air was charged with ozone.

I believe all antiseptics to be beneficial in neutralizing the effects of an excess of ozone; the flowers of sulphur, on this principle, are useful in arresting the ravages of the *oidium*, owing to the antiseptic properties of the sulphur*ous* acid given off by them in a vitiated atmosphere being converted into sulphur*ic* acid by the ozone. Gas tar not only contains antiseptic properties, but is also calculated to supply the plant with proper food, thereby rendering it healthy enough to bear, without injury, any vitiated state of the atmosphere. As the fungi on the diseased parts of the vine might be prejudicial to them if put in the soil near the roots, I would recommend all the diseased parts, when removed, to be burned, and the ashes dug into the soil.

In conclusion, I consider it the duty of all vine cultivators to endeavour to get at the root of the matter, and ascertain what is the predisposing cause of the disease in the vine, as no external application can effectually afford a cure. I should again recommend, then, that antiseptic manures should be dug into the soil, such as wood ashes (which contain potash), gas tar, also Boghead charcoal, lime, &c.; and the use of all putrescent animal and vegetable manure be abandoned, in order to restore the vine to its original state of health and natural productiveness.

I have the honour to be, sir,
Your Excellency's most obedient, humble servant,
JOHN MALAM.

Holmpton Lodge, near Withernsea, Yorkshire,
June 29, 1857.

THE "FOUR SHILLING MIXED" AGAIN.

SIR,—"Where is Mr. Lewis Thompson?" is a question that is asked by hundreds between Aldgate and Temple Bar, who have, like myself, to grope their way after dark amongst the miserable rushlights which render darkness scarcely visible in the southern section of the City. The reign of the once notorious "four shilling mixed" seems to have come back again, in spite of Dr. Letheby, who, I suppose, will tell us that the gas is still above the parliamentary standard. I do not know how true this may be, but it is quite certain that it has of late undergone a notable diminution in illuminating power, and this must dip deeply into the pockets of the citizens if means cannot be found to check it. I have a vivid recollection of the improvement caused by the publication of Mr. Thompson's photometrical tables, and I doubt not that a similar result would attend their resumption. A BENIGHTED CITIZEN.

[Mr. Thompson has been abroad for some time past, and will continue so till he has completed an important chemical work upon which he is how engaged.—ED. J. G. L.]

Register of New Patents.

42.—JOHN OLDHAM, of Preston, in the co. of Lancaster, telegraph clerk, for "*An apparatus for closing the supply-cocks of gas-burners.*" Provisional protection only obtained. Dated Jan. 5, 1857.

This invention relates to the employment of electro-magnetism as a means of simultaneously closing the supply-cocks of gas-lamps, where a large number require to be turned off, as, for example, in streets and very large works.

According to this invention it is proposed to connect the lever of each cock or tap with a helical or other spring which will always tend to keep the cock or tap shut, and at the other end with a bar of soft iron by a short length of wire or chain.

Beneath this bar is fitted a pair of electro-magnetic coils, in connexion by ordinary insulated telegraph wires, with a battery at the gas-works, or in any other convenient locality. The whole of the coils are in communication with each other so as to be in the circuit, and will, consequently, be simultaneously demagnetized when such circuit is broken.

In turning the tap to light the lamp, the bar of soft iron is brought

down on to the coils which have been previously magnetized, and is by them consequently held down and the tap kept open, the force of the spring being overcome by the attractive power of the magnetic coils.

It will, however, be evident that if the circuit be broken the whole of the bars of iron will be released, and the springs will close the several taps simultaneously. The regulation of opening of the tap so as to adjust the supply to the desired amount is effected by increasing or decreasing, as the case may be, the length of wire or chain which connects the bar of soft iron to the lever of the tap, and this adjustment may be effected by means of a screw.

48.—Julius Decimus Tripe, of King's Place, Commercial Road, in the co. of Middlesex, gentleman, for "*Improvements in mechanism for affording increased security to valves, taps, or other apparatus, used for regulating or interrupting the flow of gases, vapours, and liquids.*" Provisional protection only obtained. Dated Jan. 6, 1857.

These improvements will consist in the use and application of one or more locking apparatus to valves, syphons, sluice-gates, the plugs of taps, or other mechanism, now used or to be used for regulating or interrupting the flow of gases, vapours, and liquids. To this end it is proposed to employ a lock, so placed, that when the bolt is locked out it shall impinge against the plug, or other mechanism used in the apparatus employed for the above purposes, and so prevent such plug or other mechanism being moved until the bolt be shot (or locked) back. In some cases it is proposed to insert wards, slides, hooks, levers, or other mechanism into the plug, cup, or other part or parts of any apparatus for regulating the flow of air or liquids, in such manner as to afford better security against moving the plug, valve, sluice-gate, or other apparatus, with the keys, levers, and other means now employed for that purpose.

49.—Frederick Herbert Maberly, of Stowmarket, in the co. of Suffolk, master of arts, for "*Improvements in constructing receptacles for sewerage for separating the fluid from the solid portion thereof, and for purifying, storing, and carrying away the same.*" Provisional protection only obtained. Dated Jan. 6, 1857.

The inventor proposes to form large sunken arched vaults (except where the fall of the sewerage does not require the arched vaults should be sunken) of any suitable material, water and air-tight, save and except the openings made therein for the entrance and exit of the filth and sewerage of any description, and those to be made therein for the exit of the deodorized or partially deodorized liquid portion of such filth or sewerage. On the top of these arches it is proposed to place funnels or tubes of sufficient magnitude, containing gravel or any deodorizing substance or substances, through which the greater portion of the water that may be in the filth within the vaults will be forced by the descent of the sewerage itself or some other power, to come out comparatively clear. Tubes will be connected to the lower part of the arched vaults, through which tubes, by means of chain-pumps and net-work chain-scoops, or bags or other apparatus, the filth may be removed from the vault and be conveyed into closed cylinders or other receivers. In order to get rid of and deodorize whatever water may remain in the filth, it is proposed, where needful, to carry the tubes before mentioned to any convenient height above the cylinders or receivers, so that by the descent of the filth into them, the remaining foul water may be forced through other tubes (charged with deodorizing substances) fixed in the said cylinders or receivers, but of a less height above these cylinders or receivers than the highest part of the tube conveying the filth from the arched vaults, and so pass off clear or nearly so. The filth may be conveyed away from these cylinders or receivers in closed carts or otherwise, so that not the least offensive effluvia may escape therefrom, or the filth in these cylinders or receivers may be deodorized by admixture with peat charcoal or other deodorizing substance while in the cylinder—in such case it may be conveyed away openly. The filth may be passed, as directed, through tubes into a ship or barge; but, in such cases, the ship or barge must be fitted with a receiver, as before explained, and this arrangement will be found most valuable as regards large cities situate on rivers or close to water.

74.—John Roberts, of Upnor, in the co. of Kent, terra cotta manufacturer, for "*Improvements in the stopping or closing of jars, bottles, and other vessels; applicable also to the jointing of earthenware and other pipes.*" Provisional protection only obtained. Dated Jan. 8, 1857.

For the purposes of this invention, the yielding or elastic property of cork, soft wood, leather, india-rubber, gutta percha, or other analogous substance, is made use of, a band of one of which materials is adapted to some convenient part of the neck or stopper of the bottle, jar, or other vessel, or to the end or ends of pipes which require to be connected together. This object may be effected by causing the thread of a screw, forming part of the pipe, vessel, or cover thereof, to act or press against the elastic material, which is adapted to the jar, vessel, or pipe, and an air or water tight joint is thus obtained. Or the ring of yielding material may be fitted into an annular groove, formed in or around the neck of the jar or vessel, or end of the pipe, or in the cover of the jar or socket end of the adjoining pipe, in which is formed a female screw, by moulding, casting, or otherwise forming the same, at the time of making the pipe or cover. This female screw of the cover or socket fits on to a corresponding male screw on the vessel or pipe, so that the two parts may be connected together by screwing them one on the other.

In the case of stopping either glass or earthenware bottles, it is proposed in general to form the screw in the bottle neck, and to make the stopper the yielding medium for obtaining an air-tight stoppering.

90.—Francis Xavier Kukla, of Raven Row, Mile-End Gate, in the co. of Middlesex, for "*Improvements in apparatus for heating stoves by gas.*" Patent dated Jan. 10, 1857.

This invention has for its object improvements in apparatus for heating stoves by gas. For these purposes a metal tube or cylinder is employed, closed at the upper end by a mass of metal. This tube or cylinder is fixed at its lower end by straps to a bar, in such manner as to admit atmospheric air into the tube or cylinder freely at the bottom. The upper part of the tube or cylinder, below where it is closed, is perforated with numerous small holes. One end of a gas-pipe, having a suitable regulating cock, is passed through and fixed to the bar, so that the upper end of the pipes rises some height into the tube or cylinder. On the inside of the tube or cylinder is a cylinder of wire gauze, which descends below the parts of the tube or cylinder which are perforated. The lower part of the gauze cylinder is closed in around the gas-supply pipe by a cone of gauze. The gas is thus admitted into the cylinder of gauze, and is there mixed with atmospheric air; and the two, mixed together, pass through the perforations in the upper part of the tube or cylinder and are ignited. This arrangement or combination of apparatus is placed inside of any suitable case, forming a gas-stove.

93.—Paul Desrues, of Paris, chemist, for "*Improvements in purifying gas.*" Provisional protection only obtained. Dated Jan. 10, 1857.

According to this invention, the gas is purified by hypochlorites generally, but in particular by that of lime (chloride of lime). These bodies seize the sulphurous compounds (principally sulphuretted hydrogen) contained in gas without at all altering the colouring of the gas or detracting from its lighting power.

By this means the gas loses its offensive odour.

The ordinary apparatus used for purifying gas may be used with this invention, but as the purifying is effected more rapidly, apparatus to purify the same volume in a given time may be much less extensive. The hypochlorite of lime is introduced in the ordinary manner of disposing the purifying materials into vats. By reason of the slight thickness of material of which the beds of the vats may consist, the gas has to overcome but a very slight pressure compared to what takes place in ordinary processes.

This advantage saves at least two-thirds the hand labour usually required. When the chloride of lime is exhausted, it contains a considerable quantity of chloride of calcium, which siezes on and combines with the ammoniacal matter that gas contains. The chloride of calcium may be employed either as it is produced, or purified; by dissolving it in water, it produces insoluble carbonate of lime, and hydrochlorate of ammonia, which are easily separated by a washing, and adapted for commercial purposes.

98.—George Fergusson Wilson, of Belmont, Vauxhall, in the co. of Surrey, for "*Improvements in treating Burmese and such like petroleum and their products.*" Patent dated Jan. 12, 1857.

The nature of this invention consists in the distillation of Burmese and such like petroleum and their products in a vacuum, or partial vacuum.

Heretofore Burmese and such like petroleum and their products have been distilled by the aid of ordinary steam, superheated steam, and by fire-heat; but it has been discovered that such descriptions of petroleum and their products may be more advantageously distilled by the aid of vacuum; and it is preferred to employ vacuum apparatus such as is used in boiling sugar in vacuum pans, applying, however, a refrigerator and receiver between the boiler or still and the air-pump or vacuum apparatus. The boiler or still is preferred to be heated by a steam coil or steam jacket. When separating the light and more volatile products, the refrigerator is surrounded by as cold water as may be: by this means the lighter products are more effectually condensed.

This invention is not only advantageous in treating the crude Burmese and such like petroleum, but also the products thereof which have been obtained by previous distillation.

102.—George Eskholme and Henry Wilkes, both of Rotheram, in the co. of York, engineers, for "*Improvements in apparatus for preventing waste of water from service-pipes and cisterns.*" Patent dated Jan. 12, 1857.

This invention relates to a peculiar construction and arrangement of apparatus whereby the waste of water from service-pipes and cisterns is obviated, while at the same time a certain fixed amount of water is allowed to flow through the apparatus each time it is used. This apparatus is particularly applicable to water-closets or any purpose when prevention of waste of water is desirable.

The body of the apparatus consists of a cylinder fitted with a piston. On the lower end of the stem of the piston is fitted a double-faced valve, the seat of which is situated between the two faces. When this valve rises or falls so as to bring either one or the other of the two faces on to the valve-seat, a flow of water will pass into the closet, such flow continuing only during the time that the valve occupies in rising or falling.

The movement of this valve is controlled in the following manner:—The inlet-pipe leading from the service-pipe or main opens into the cylinder below the piston, which is of larger area than the valve, and consequently the pressure tends to elevate the piston and raise the valve unless an equilibrium of pressure be established on both sides of the piston. For this purpose a water-way leads from the inlet-pipe to the interior of the cylinder above the piston, and this water-way is capable of being opened or closed by means of a conical ground plug, the handle of which answers as the pull of the closet. A second water-way, similar to the first one, leads from the upper end of the cylinder, above the piston, to below the seat of the double-faced supply-valve hereinbefore referred to. The conical plug or cock is so constructed that, by turning it partially round, one of these water-ways will be made to communicate with the top of the cylinder, and the other will be shut off therefrom. The action of this apparatus is as follows:—Supposing the piston to be up, and the lower valve-face to be consequently pressed against the under side of the seating, if it be desired to flush the closet, the conical plug or cock must be turned partially round, so as to admit of the fluid pressure acting upon the top of the piston; but the extra downward pressure on the valve causes it to descend and open, the time occupied by such descent being regulated by the size of opening through which the water enters the top of the cylinder. This aperture may be adjusted to any desired extent by means of a screw-plug. After the proper supply has passed down the closet, the upper face of the valve will come into action, and stop all further supply until the next time the closet is used. If the cock be now turned so as to open a communication with the escape water-way, and at the same time the first-mentioned or pressure water-way be closed, the equilibrium will be destroyed, and the fluid pressure exerted on the under side of the piston will raise it and open the valve; the water above the piston will then be forced through the small aperture before referred to, and will pass down the closet with the rest of the supply.

It will thus be obvious that both faces of the valve act as permanent

valves alternately, the apparatus working equally well whether the piston be up or down when the closet is used.

The claim is for—

1. The general construction, arrangement, and combination of apparatus for preventing waste of water from service-pipes or cisterns.

2. The application and use of the conical plug (marked K in drawings) in combination with the water-ways (H and H').

3. The combination of the valve-faces with the piston in such a manner that each valve-face will act as a permanent water-tight valve without requiring readjustment after use.

4. The system or mode of regulating the amount of water to flow down the closet by means of an adjustable screw-plug, having a conical or tapered slot formed therein.

114.—Sir James Murray, knight, and doctor of medicine, of Dublin, Ireland, for "*Abating the smells and increasing the fertilizing usefulness of liquid manures, sewerage, gas, or other liquors; and for means of raising or propelling such mixtures, and other solids or fluids, to convenient heights or distances.*" Patent dated Jan. 14, 1857.

To effect these improvements, strong vats or condensing vessels are used, lined with some metallic, resinous, vitreous, or bituminous covering, and made air tight, the whole being of sufficient strength to bear from one to six atmospheres.

To obtain the fixed air, carbonates of lime, limestone, shells, bones, &c., are previously introduced into the condensers in perforated cages or nets at the bottom: after which, or before it, equivalents of a mineral acid or acids are introduced, so that, when agitation is rapidly going on, the above alkaline and acid ingredients may be brought into contact, and the fixed air evolved accordingly, and a source of motive-power obtained.

The condensers may be formed with an interior casing or lining composed of a material more or less elastic. This construction of the condenser is intended to admit of the internal vessel or linings being made to expand and contract alternately by the expansion and condensation of the gas or air generated or introduced therein. By this means the solid and fluid matters may be discharged from the condensers, and impelled so as to be conveyed to their required situation.

The claim is for—

1. The use of acids and carbonates applied to, or mixed with, the contents of sewers, drains, and other channels for the passage or discharge of refuse matter, by means of apparatus and mechanism, as described, for the purpose of abating smells.

2. The production and consolidation of a triple phosphate of ammonia and magnesia, applicable to the purposes of manures by the combined use of such chemical substances with the apparatus and mechanism as described.

3. The propulsion of fluid and solid matters so as to raise or force them to convenient heights or distances, and distribute them, as may be required, by means of a condensible gas or air generated within some of the vessels or condensers, and made to press upon the surface of such matters and force them forwards, or by expanding the lining of such vessels in the manner described.

PROVISIONAL PROTECTION

HAS BEEN GRANTED FOR THE UNDERMENTIONED PATENTS.

1702.—Thomas Lowell Ralph, of Birmingham, in the co. of Warwick, metal-roller, and Thomas Lowell Ralph, the younger, of Birmingham, metal-roller, for "*An improvement or improvements in the manufacture of metallic tubes.*" June 18, 1857.

1722.—William Wright, of Sheffield, in the co. of York, plumber, for "*Improvements in flushing apparatus, applicable to cisterns and water-closets.*" June 20, 1857.

1823.—William Maltby, of Grove Hill, Camberwell, London, gentleman, for "*Improvements in the mode of extracting ammonia and other compounds from gas, gas liquor, sewerage, and other substances.*" June 29, 1857.

NOTICES HAVE BEEN GIVEN OF INTENTION TO PROCEED WITH THE UNDERMENTIONED PATENTS.

599.—Samuel Wright, of Hastead, Essex, brass founder, for "*Improvements in gas regulators.*" March 2, 1857.

621.—Georges Danré, engineer, and Pierre Fortuné Victor Mouillard, gentleman, and Pierre Adrien Mercier, gentleman, of Paris, for "*An improved method of, and apparatus for, heating by gas.*" March 3, 1857.

650.—Thomas Jefferson Thompson, of Greenwood Park, Newry, in the co. of Down, Ireland, mechanical engineer, for "*Improvements in the construction of gasometers, whereby they are rendered applicable to lighting railway carriages.*" March 5, 1857.

660.—Georges Danré, engineer, and Pierre Fortuné Victor Mouillard, gentleman, and Pierre Adrien Mercier, gentleman, of Paris, for "*Improvements in carbonizing or distilling wood, peat, oil cake, coal, and other substances, for the production of gas for lighting, in carburetting or increasing the illuminating effect, and in compressing gas also in the apparatus employed for such purposes.*" March 6, 1857.

1258.—John Thomas Way, of Welbeck Street, London, for "*Improvements in obtaining light by electricity, and in employing light so obtained for lighthouses and for giving signals.*" May 4, 1857.

1566.—Richard Archibald Brooman, of 166, Fleet Street, London, patent agent, for "*Improvements in gas-burners.*" June 3, 1857.

1695.—Frederick Warner, of Jewin Crescent, Cripplegate, for "*Improvements in supplying water to water-closets and other vessels.*" June 17, 1857.

Legal Intelligence.

VICE-CHANCELLOR'S COURT.

Monday, July 6.

(Before Vice-Chancellor Stuart.)

HOLE *v.* BARLOW.

This was a motion for an injunction to restrain the defendant from burning or causing to be burnt any bricks on his lands, opposite to Brunswick Road, Holloway, so as to occasion damage or annoyance to the plaintiff, as owner of two houses in that road. Prior to May last the plaintiff was, and he is now, the leasehold owner and the occupier of No. 58, Brunswick Road, where he carries on the business of a builder; and he is also the leasehold owner of another house in Brunswick Road, which is let on lease to a tenant. The bill alleged that the defendant, about the 22nd of May, commenced the construction of two brick kilns on land in his possession, immediately opposite to the front windows and entrances of the two before-mentioned houses belonging to the plaintiff; that the plaintiff first discovered such proceedings of the defendant within a very few days prior to the 22nd of May; that the two kilns had since been completed; and that, since such completion, the defendant had burnt bricks in them, and that he had thereby committed a nuisance, to the injury and annoyance of the plaintiff. It appeared that one of such kilns was within 74 feet of the front wall of the house occupied by the plaintiff; and that such kiln and the plaintiff's house were separated only by the intervening public road. The defendant's case was, that the land in which he was making bricks had been used as a brick-field for many years past, and long before the plaintiff came into the locality—which was in the year 1855—or either of his houses was erected; that when the plaintiff came to reside in the Brunswick Road there was a heap of clay on the defendant's land, which the plaintiff must have seen, and which, if he had inquired, he might have ascertained was intended to be converted into bricks; that the defendant commenced operations on his land on the 30th of January last; that between that time and the 22nd of May the plaintiff was frequently told by the defendant and his workmen that it was their intention to convert the clay then on the land into bricks; and that the plaintiff himself, immediately in the rear of several houses in the Brunswick Road, including his own two houses, burnt clay into ballast for the construction of roads. There was considerable conflict on the evidence with reference to the annoyance and injurious effects resulting from the acts complained of in the bill; the evidence for the plaintiff being to the effect that several persons had left the neighbourhood from the annoyance and injury to their health resulting from the burning of bricks on the defendant's land; while the evidence for the defendant went to show that the burning of bricks was a healthy occupation; that persons engaged in it generally enjoy good health, and attain to old age; and that persons who knew of the brick-burning on the defendant's land were anxious to go and reside in the Brunswick Road for the benefit of their health.

Mr. Bacon and Mr. Rogers were for the plaintiff; Mr. Malins and Mr. Speed for the defendant.

The Vice-Chancellor, in giving judgment, said: I do not feel justified in interfering in the present state of the matter, at least, until the plaintiff asserts his title at law. Previous to 1853, and apparently up to 1855, bricks had been burnt on this land. There was a mound of brick earth on this land, and the defendant says that the plaintiff must have seen the clay when he first came to Brunswick Road. Now the plaintiff's title accrued in 1855, as I understand. It is sworn that he must have seen the clay there, and if that be so, it is a very material circumstance on the question of his right to restrain the defendant from proceeding to use this field for the purpose for which it had been used before, and from using this clay which the plaintiff must have seen on the land. That is not all, however. It seems that the plaintiff himself has been carrying on an operation which is called "burning ballast," on the land. He says, indeed, he did burn a small portion of ballast, but the time occupied in burning the ballast was only three weeks, or thereabouts, and did not cause any annoyance. On both sides it is sworn that the plaintiff, by burning his ballast, caused an annoyance; and it is sworn to by some of the witnesses that brick-burning is no annoyance, and according to other witnesses, it is the contrary. I pay no attention to the evidence that it is not a nuisance, because there cannot be a doubt that burning bricks so close, within 70 feet of the front of a man's house, is a nuisance. It seems to me to be a thing which admits of no doubt at all. Whether burning ballast for three weeks is a nuisance, I am not prepared to say; but the defendant is a burner of ballast and a burner of bricks in the same neighbourhood. It is a great deal too much for this court to interfere at once, and say that the defendant shall be stopped. All I can do is, to order the motion to stand over, with liberty to the plaintiff to bring such action as he may be advised, or rather, to take such proceedings at law as he may be advised. Another material circumstance in the case is, that although from January last it seems pretty plain that the plaintiff must have seen what the defendant intended to do, and although, according to the plaintiff's own statements, before the month of March the bricks began to be placed where they are now said to be placed, no step is taken until the 20th of May. On the whole, I cannot interfere on the ground assigned.

Mr. Malins: Your honor orders the motion to stand over?

The Vice-Chancellor: The usual order—to stand over, with liberty to the plaintiff to take such proceedings at law as he may be advised.

Mr. Malins: I do not know whether your honor says anything about costs; your honor has refused the motion?

The Vice-Chancellor: No, I think I am not at liberty. I hardly ever knew that to be done until the plaintiff asserts his legal right, which I think he should establish.

Wednesday, July 15.

This case now came on by way of appeal before the Lords Justices, and at the conclusion of the arguments their lordships ordered it to stand over till Saturday week, to afford the plaintiff an opportunity of filing further affidavits; but their lordships expressed a hope that, in the meantime, the parties would be able to come to some arrangement.

CAMBRIDGE BOROUGH SESSIONS.

Monday, June 29.

(Before the Recorder.)

THE CAMBRIDGE WATER-WORKS COMPANY *v.* THE GUARDIANS OF THE CAMBRIDGE UNION.

This was an appeal against a rate, based upon the award made by Messrs. Harwood and Mann, who had assessed the company at £1000. It will be recollected that at the last sessions this rate was appealed against, and the deputy-recorder, Dr. Leapingwell, had reduced the assessment to the nominal sum of 14s., being 1s. for each parish. Against that decision the Board of Guardians had appealed to the Court of Queen's Bench, on the ground that Dr. Leapingwell held five shares in the Water-Works Company; and the case was sent down for trial again before the Recorder. Serjeant Byles, Mr. Couch, and Mr. Mills for the appellants; Dr. Tozer, Mr Metcalfe, and Mr. D. Brown for the respondents.

Dr. Tozer took a preliminary objection, arguing that the Recorder had no jurisdiction. He contended that the appellants ought not to oppose the rate in component parts, but on the entire valuation. The arguments ad-

duced on this and other points of the case were just the same in substance as those brought forward on the last hearing of the case, so that it is needless to repeat them *in extenso*.

Mr. METCALFE followed on the same side.

Mr. Serjeant BYLES and Mr. COUCH were heard in reply, contending that the case must be heard, or why had it been sent down for trial from the court above?

The RECORDER decided that the case should be heard as though it had not hitherto been brought before the court.

Next followed a long argument, as at the previous session, on a point of precedence, the Recorder deciding, as it had before been decided, that the respondents should open.

Dr. TOZER then opened the case, saying, Great pains had been taken to discover what would be the proper amount for the Water-Works Company to pay, and he would call evidence to show that the assessment should be between £400 and £500 in St. Andrew the Less (the appeal now before the court). The assessment for the whole union had been £1000.

Mr. Serjeant BYLES said the question was, whether the rating should be nominal or not. The works of the company were in the parish of Cherryhinton; the company had only pipes in Cambridge. His learned friend had stated that he should produce evidence to show that those pipes should be rated at between £400 and £500; and he (Serjeant Byles) would also produce evidence to show that they ought not to be rated at one shilling; better far that the case should be settled, so far as the town of Cambridge was concerned, but not so as regarded the barrister, for he wished, with all his heart, this litigation might last for 20 years. (Laughter.)

Dr. TOZER said the question to be considered was, what rent could be obtained if the property were put up to public competition, and conducted with such skill as to ensure a profit. He then proceeded to call witnesses, as follow:—

Mr. *G. Peters* (of London): I am a contractor; made the water-works in Cambridge; laid the pipes; there are about 20 miles of trunk piping in the union—this is the main piping; the service-pipes belong to the company; 618 houses, four colleges, and 100 water-closets use the company's water.

The RECORDER: That shows well for Cambridge since I have known it.

Witness: There are about 7000 houses in Cambridge; I received for the pipes I put down about £15,300. In addition, there are 400 hydrants belonging to the Improvement Commissioners.

Cross-examined by Serjeant BYLES: The Water-Works Company is an infant concern. I have not, as a shareholder, received any dividends, but hope to do so. A tenth part of the houses are not yet supplied with water. I know nothing of a deficit of £165, up to January, 1857. About £470 has been received for coprolites in Fen Ditton, being at the rate of £100 per acre; and if it were not for that sum the company would have a greater deficit than £165. I am a contractor. If you were to give me £200 a-year for one year to take the affair, I paying all outgoings, I would take it.

Serjeant BYLES: Would you give anything for it?

Witness: I don't know the expenses of management. It is hardly a fair question. There is a favourable balance of £400 up to January, 1857. From 1855 to 1856, I would not, according to the balance-sheet, give anything for the concern.

Mr. *S. Hughes* (of Westminster): I am an engineer, and have had great experience as a valuer for the purposes of rating, especially water-works and railways. I have valued the Cambridge Water-Works; the gross value of the pipes now is £15,000—assuming that to be the original value—they have not depreciated. The gross estimated rental I make £1181 per annum. I now include the whole value; then I make statutable deductions, reducing it to £872 on the whole works; that is what a tenant would pay for the whole year. I make reductions on repairs of pipes, &c., and depreciations of reservoirs, which amount to £309. I divide the rating between Cambridge and Cherryhinton as follows:—Cambridge, £504; Cherryhinton, £368; making £872.

Cross-examined by Mr. Serjeant BYLES: I have not taken into consideration the capital expended. I have not been engaged in rating any companies so "infant" as this one. I know nothing of water companies at York, Exeter, or Yarmouth. I have been engaged in rating Chelsea Water-Works, which, from change of circumstances, put them in the position of an infant company. The East-London I have also valued. The income of the Chelsea Water-Works amounts to about £40,000 a year. I apply the same principles in valuation to all cases under the Parochial Assessment Act.

Serjeant BYLES: Then, assuming that for the first year of the company's working there is a deficit of £165, would you rate that company's works at £872, assuming the management to be correct?

Witness: No; if there is no profit, there is no rateable value.

By Dr. TOZER: I do not think that sufficient is made by the company; the tariff is too high.

The RECORDER: What has that to do with the question?

Witness: I think the expenditure much too high for a small concern like this.

Serjeant BYLES: Ask the witness if he does not know that the tariff is the lowest in England?

The RECORDER: It is not evidence. The question is, how much the rate ought to be reduced. A question with me is, whether I should not quash the rate.

Serjeant BYLES: We don't wish you to do that.

The RECORDER: Could not some arrangement be come to for an amicable settlement?

Serjeant BYLES: I am in a position to quash the rate, but I do not wish to do it.

The RECORDER said if it were possible to effect an arrangement it should be done. The property had been put too high. There was an intermediate course.

Dr. TOZER: My clients are willing to abide by any decision you may suggest; and on their behalf I offer that the valuation be reduced to £400.

Serjeant BYLES: I really cannot agree to it. I shall show that we ought not to be put in the rate at all. I have strong evidence to show that the property ought never to have been in the valuation.

The evidence then proceeded:—

Mr. *A. Renny*, engineer, of London: I have contracts for gas, but not water-works. I have examined Cambridge as to the water-works and houses. I am prepared to take them at a rent. I take the proportion of Cambridge at £412 net rateable value.

Cross-examined: I have never been lessee of water-works. If I were to take the whole works, I should want a 7 years' lease.

Re-examined: I would not be encumbered with the present management.

Mr. *Jacob Watts*, assistant overseer of Cherryhinton: The Water-Works Company has been rated in Cherryhinton at £3. 6s. 8d. a rate; they have paid three rates.

Cross-examined: There are 5 acres, independent of buildings.

Mr. *Ransom*, surgeon, proved that he had sunk a well on his premises because he could not agree with the Water-Works Company.

The RECORDER hardly concurring with this sort of evidence, the respondents, who had several other witnesses, closed their case.

Mr. Serjeant BYLES then addressed the court, and quoted the case Atkins *v.* Davis (325, *Caldicott's Reports*), to show that property could not be rated where there were no profits. When, he said, it did yield a profit, then it would legitimately become a subject for taxation; but the Cambridge Water-Works Company did not pay its expenses. The pipes were underground; the upper surface used by the public. Would it let for one shilling if the pipes were not there?—he meant where the pipes were placed. Three witnesses were called, neither of whom would give one sixpence for the property for a year's hiring; and it was not in a position to command a sixpence. He confidently asked the court to give the 14s. as awarded at the last sessions, and that would be 13s. too much; and he could not believe that the previous judgment given by the deputy-recorder would now be overthrown by the recorder. The learned serjeant then proceeded to call witnesses.

Mr. *S. Peed*, secretary to the Water-Works Company: I have the books of the company here, showing the amount of disbursements up to the 6th of January, 1857. They amounted to £712. [Several items were gone into, making up the total.] Received up to the same time £401. 15s. 7d. of the inhabitants; £145. 10s. from the Improvement Commissioners for watering the streets; making £547. 5s. 7d.; leaving a deficiency of £165. The company bought four acres of land, which they let at £20 a year, and sold the right to dig coprolites at £400; and, if it had not been for that, the loss on the first year would have been very great.

Cross-examined: It would be injurious to the company, and injurious to the lessee, to let it for a year; it would be worth £1000 a year for seven years; I know of no shares sold under par. My notion of the value of the shares is not their present value, but what their value will be. I believe they will be worth 10 per cent., but not for some years to come. I have heard of no complaints as to the conduct of the company. Johnson, the manager, has left, but we lost nothing by him. We did all we could to extend the business of the company; but we got no profit, but a loss; and there will be a loss next year I dare say.

Mr. *Simpson*, engineer, of Westminster: I have been engaged in making hydraulic constructions for 35 years in many of the most important places in England. I have known several in their infant condition. I have heard Mr. Peed's statement; and the pipes have no ratable value, only nominally so for the purpose of rating; nor is it usual to rate, except nominally, such property, until they are profitable.

Cross-examined: No man of prudence would hire these places, and give a rent for them, in their infancy.

Mr. COUCH summed up on the evidence; at the conclusion of which

The RECORDER proceeded to deliver his judgment. He said that there was in the first instance an assessment on this property which nothing could justify, and down pounced the borough on the property; but it was resisted; and now a compromise was offered of £400. He should dismiss from his mind anything that had transpired at the previous hearing of this case: but consider the subject in all its bearings. It was admitted by the opponents of the company that £400 was the most that could be asked, and he had put it to himself whether he could for convenience put it at half this sum (£200); but that he could not agree to. Parish officials had no right to unfairly put their hands in the pockets of public companies, and he should fix the assessment at £150.

Mr. Serjeant BYLES applied for costs, saying if ever there was a case entitled to costs it was this.

The RECORDER granted costs; and a consultation arose as to whether the sum could not at once be fixed. £150 was named by the appellants; £100 was offered by the respondents; £125 was "tried," but failing, it was agreed, to prevent taxing, to fix them at £100, Serjeant Byles having left the court, had endorsed this sum on the brief.

The RECORDER happening to say that he only granted costs on one appeal, and not on the whole 14, Dr. TOZER and Mr. FETCH at once withdrew their agreement to £100, saying they supposed that costs were granted on the whole appeals, which led them to name £100.

Mr. PEED evinced some warmth, saying that it was just the shuffling conduct that had been displayed on the same subject at the last sessions.

Serjeant BYLES was sent for, and expostulated on this "breaking faith;" and, after a little "Babel" of legal tongues, expressions of "surprise," &c., &c., on both sides, it was agreed that Serjeant Byles and Dr. Tozer should lay "their heads together,"—each stating that no doubt the knotty point would be amicably settled.

CAMBRIDGE GAS COMPANY *v.* GUARDIANS.

These appeals were similar to the last; but it appeared that in most of the cases an amicable settlement had been arrived at, and where it was not so the appeals were respited.

Miscellaneous News.

CITY OF LONDON GASLIGHT AND COKE COMPANY.

The Half-Yearly General Meeting of the Proprietors was held at the Company's Works, Dorset Street, on Wednesday, the 15th inst.—ROBERT ALEXANDER GRAY, Esq., in the chair.

The SECRETARY (Mr. R. J. Millar) having read the advertisement convening the meeting, the minutes of the last half-yearly court were read and approved.

The SECRETARY then read the report of the directors, which was as follows:—

The proceedings of your committee during the last half year furnishing few incidents to which it is necessary to invite your special notice, they proceed at once to call your attention to the details of the general working of your concern during that period, as set forth in the statements which have been duly certified by the auditors, and will now be read. The first subject for consideration is the state of the rental, the amount of which for the half year is £37,544. 11s. 5d., being an excess over the corresponding half year of 1856 of £2662. 2s. 10d. The rental for the whole year just ended is £71,394. 7s. 9d., showing an increase on that of the preceding year of about £5000; and your committee have much pleasure in adding that it has not been found necessary to incur any extraordinary expenditure during the half year, so that the profit of this increased rental is available for dividend. From this, and various other causes, your committee are enabled to point to a manifest improvement in the profit and loss account. The net profit for the half year is £9403. 16s. 6d., being an increase over the corresponding half year of 1856 of £5387. 16s. 3d.; and the balance now at your disposal, after deducting an amount paid on account of income and property-tax to Lady-day, is £9289. 6s. This gratifying result your committee have reason to believe, arises, in addition to what is stated above, in part from the more general use of clay retorts, to which they have referred in previous reports,

and in part from the very favourable contracts they have been enabled to make for coal. And your committee unanimously recommend you to declare a dividend for the last half year at and after the rate of £4 per cent. per annum, the same to be paid, as heretofore, free of income-tax, on the first Tuesday in November next. The increased demand for gas has rendered it necessary to enlarge the capacity of your mains in some parts of the district, especially eastward; your committee have therefore substituted a 6-inch main for a 3-inch from Gracechurch Street, through Fenchurch Street, to Callum Street, and also in Cooper's Row and its immediate locality. Referring to former reports as to the measures adopted by your committee to meet the sanitary requirements of the age, they now submit to you the following testimony as to the efficiency and success of those measures. Dr. Odling, medical officer of health for Lambeth—a gentleman altogether unknown to your committee—requested permission to inspect the works; and, after having done so, attended by the engineer, he very politely favoured your committee with the result of his inspection in a letter, of which the following is a copy:—

"*Guy's Hospital, June* 8, 1857.

"To the Chairman and Directors of the City Gaslight Company.

"Gentlemen,—I beg to thank you for so kindly allowing me to visit your works at Blackfriars, and to express to you the gratification I felt at witnessing the perfection and ingenuity of the many contrivances there employed for carrying on the processes of gas manufacture in an unobjectionable manner. I scarcely think it will be possible for any scheme of purification to excel that adopted by you in the inoffensiveness of its character. I was quite unprepared to find that the process really could be conducted, as it is by you, with a total absence of any emanations to which even the most fastidious could raise a reasonable objection. In my opinion, the care taken by you to abstract ammonia prior to the passage of the gas into the 'oxide' purifiers, together with your elaborate plan of washing out the 'oxide' purifiers with already purified gas, render the revivification of the 'oxide,' as conducted on your works, a perfectly unobjectionable operation.

"I am, &c., "Wm. Odling."

Your committee are much gratified, in closing their report, to place on record a document so strongly confirmatory of previous statements on the same subject.

The half-yearly accounts and general balance-sheet were also read, as follow:—

STATEMENT of PROFIT and LOSS, for the Half Year ending Midsummer, 1857.

Dr.		*Cr.*	
To cost of coal consumed, including porterage	£19,554 1 11	By rental	£37,544 11 5
Rents, rates, and taxes	1,637 16 2	Coke	6,417 5 6
Wages	6,836 15 10	Breeze	285 3 6
Committee of management and auditors	516 1 6	Liquor	603 13 6
Salaries	1,815 0 0	Tar	1,025 7 5
Tradesmen's accounts	4,471 19 4	Old materials, &c.	500 15 9
Repair and depreciation of meters	394 4 8		
Petty cash disbursements	373 2 1		
Interest	1,031 3 0		
Bad debts, &c.	372 16 1		
Balance	9,403 16 6		
Total	£46,376 17 1	Total	£46,376 17 1
		Balance of profit brought down	£9,403 16 0

GENERAL BALANCE-SHEET, Midsummer, 1857.

Dr.			*Cr.*	
To capital	£300,000 0 0	By plant		£290,831 11 7
Amount due to trustees of loan-fund	25,475 1 0	Leasehold property		5,134 0 0
Debts due to sundries	16,162 8 9	Amount due for light	£17,816 10 10	
Balance carried down	9,289 6 0	Do. coke, &c.	2,254 13 9	
		Do. sundries	691 3 11	
				30,762 8 6
		Amount of cash on hand	£2,327 0 6	
		Petty cash	16 3 2	
		City Gas shares	9,594 15 0	
				11,937 18 8
		Stock on hand—coal, &c.	£3,213 15 3	
		Do. materials	2,880 16 7	
		Do. meters	16,116 5 2	
				22,210 17 0
Total	£350,926 15 9	Total		£350,926 15 9
		Balance of profit brought down		9,289 6 0

The Chairman, in moving the adoption of the report, said: Gentlemen, if you have been gratified in hearing the report just read, you may well imagine what must be the feelings of your committee of management, in witnessing the apparent return to that state of prosperity in the company's affairs of which they have been so long deprived, and for which they have so anxiously looked. (Hear, hear.) At various meetings similar to the present I have taken the opportunity of intimating to you my opinion, that the affairs of the company were based upon a solid foundation, although the equanimity, both of the committee and of the proprietors at large, has been somewhat severely tried by the untoward circumstances and the unfortunate opposition to which we have been subjected for a long time past. It is not my wish at this meeting to say one word in disparagement of any one unconnected with this company; on the contrary, I am gratified in being able to state that for the last half year we have gone on most satisfactorily and harmoniously with the Great Central Company. I sincerely hope that there may be no interruption of that state of things—(hear, hear)—because I am convinced that the welfare of both companies very much depends upon the maintenance of the good understanding which at present exists. I have foreshadowed, on one or two previous occasions, that at no distant time the affairs of this company would be very much improved; and, to a certain extent, my anticipations in this behalf have been realized. But I should be deceiving myself and misleading you, if I did not unhesitatingly say that I believe we have not yet arrived at the full extent of our prosperity. (Hear, hear.) And why do I thus confidently state this? I will refer to one or two subjects in support of my opinion. I will take, first, the difference in the price of coke at Christmas last and during the half year ending at Midsummer. And what do I find? I find a difference in the price of that commodity to the disadvantage of the latter period of nearly £900; so that, had there been no falling off, we should have had that additional amount to divide, making our total disposable balance upwards of £10,000. (Hear, hear.) I may say, too, for myself and my colleagues in the committee, that we feel very much indebted to the proprietors for the forbearance they have shown towards us during the late trying circumstances in which the company have been placed. Although disappointment pressed heavily upon them, and they saw their property constantly depreciating in value, I do not recollect a single expression of disapprobation escaping from the lips of one of the proprietors, from which I infer, that in their judgments, the committee were doing their best in the midst of their trying duties to preserve the interests of the shareholders, and were only thwarted in their object by the occurrence of events over which they could exercise no control. (Hear, hear.) We are now, I hope, in a state of progressive prosperity. Of one thing I can assure you, and that is, that there will be no relaxation of effort on the part of the committee to extend that prosperity. We have not been unmindful of the necessity imposed upon us to keep our works in a state so complete, that the most fastidious persons could have no real cause of complaint, because we have been fully aware, in the situation in which our property is placed, nothing but the most unremitting attention on this point could prevent us from incurring the disapprobation of our neighbours. Happily for us, the success which has attended the care thus bestowed, has been amply testified by the very satisfactory letter received from Dr. Odling, and which has just been read to you. (Hear, hear.) And I may remind you, that that letter is fully confirmatory of the opinions expressed by other medical men of high standing, who visited the works during the past year. The increase which has taken place in our rental is very gratifying. It proves that there is an increasing demand for gas, and my honest opinion is, that we have not yet arrived at the full extent of that demand, which we are quite prepared to meet. Taking the rental of the last half year, and assuming that the next half year will be the same, we shall have a rental of £75,000 per annum, which will be a very considerable increase over the previous year. And you will bear in mind that this additional amount has been obtained with a diminished consumption of coals to the extent of 1100 tons, which is a very important consideration. (Hear, hear.) I am happy to say, too, that the cost of coals has been much less this half year than in the half year preceding.

Mr. Sangster: Yes; 2s. a ton less.

The Chairman: At Christmas, 1855, the price of coals was 17s. 2½d. per ton; for the past half year the price has been only 15s. 4d. per ton; which makes a difference in the cost of production to the extent I have just mentioned. I am also happy to inform you that we have continued to keep up the illuminating quality of our gas; while, from some cause or other, probably from their being in a transition state, the illuminating quality of the gas supplied by the Great Central Company has fallen considerably under ours. I will not, however, dwell upon that circumstance. You are, most of you, aware that Mr. Croll is about to give up his contract; and that gentleman is, as I believe, to be succeeded by the Messrs. Prior. This circumstance may account for the falling off in the illuminating quality of the Great Central gas, as otherwise there has heretofore been but little difference in the quality of the two companies' gas. But this I must say, that if this reduction in illuminating power goes on, it will become a question whether we ought to continue to furnish gas of 30 or 40 per cent. higher quality than the consumers in some parts of the City are satisfied with as supplied by the Great Central Company. It certainly does not appear to me desirable that we should do so. The better course, in my opinion, would be for Mr. Dakin, the chairman of that company, and those connected with him, to state that the calculation upon which the present price is fixed was based upon the supply of gas of a quality equal only to the parliamentary standard; and that they have no obligation to give gas of a higher illuminating power at that price. Certainly, if the consumers require to be supplied with gas 33 per cent. beyond the standard stipulated for by the Act of Parliament, they ought to be prepared to pay for it in proportion. This is a point which the company will certainly have to determine for themselves. You are aware that there is no company in the metropolis, except our own and the Great Central, which continues to supply gas at 4s. per 1000; and I cannot for the life of me understand why it is that we, who have embarked our capital in the City, should be deprived of the advantages which other gas companies immediately around us are enjoying. (Hear, hear.) It is unfair in principle; it is not called for as an act of justice; and I sincerely trust it will soon remedy itself. (Hear, hear.) You know that it was the outcry against "monopoly" which originated the Great Central Company; but what is the actual state of things at present in existence? Why, all the gas companies in the neighbourhood of London have agreed to a system of districting, which, although it is for the public convenience, certainly has the effect of giving to each a virtual monopoly. I think it is wise that it should be so; because it is found that the constant disturbance of the thoroughfares by two or three rival companies is, in itself, a very great evil and annoyance to the public at large. Every tradesman in the metropolis knows what this difficulty is; and, therefore, the present system adopted by the gas companies is allowed to pass unopposed. Gentlemen, this is the state of things around us; and I hope, when I next have the pleasure of meeting you, I shall have to announce that the Great Central have consented to an increase of the price of gas in the City. (Hear.) But be that as it may, your committee will not relax in their exertions; and if they are not able on the next occasion to give you a better account, they hope, at all events, to come before you with a statement equally satisfactory to that which they have now presented you. I may say, in conclusion, that, though our frequent appeals to the proprietors to take up the remainder of the bonds have not been responded to, yet we have found other means to keep the ship sailing, and we hope to do the same in the future. Still there are £4000 or £5000 of bonds which it would certainly be satisfactory if the proprietors would take up, as by so doing they would enable the committee to feel themselves in a more independent position. But I have exhausted the subject on previous occasions, and I can now only say that, whether you do so or not, I hope we shall be able to carry on your concern as we have done in the past. There is a charge in the accounts of £1000 for interest; but I do not think

much of that, because, if we had kept in hand the money which you have received, this charge never would have appeared; so that if you do not get it in one way, you do in another. Gentlemen, I congratulate you upon the present prosperous position of the company; and I advise you by no means to think of parting with your shares. (Hear, hear.) I assure you that I never contemplate doing so myself, for I anticipate the day—and that not far distant, too—when, if they do not get up to £200, they will to £150, and I think even beyond that. My advice to you, therefore, is—keep your shares, and have confidence in your committee of management, that they will do whatever they feel will be for the best to promote your prosperity. If any unforeseen difficulty should arise—which, however, I do not at all apprehend—you may depend upon it that you will be summoned together in order that the committee may have the benefit of your counsel and advice. I sincerely trust that, so long as I and my colleagues have the honour of your confidence, the company will go on and prosper to the perfect satisfaction of every one of the proprietors. (Cheers.) I now move that the report of the committee and the statement of accounts laid before you be adopted.

Mr. HARDWICK seconded the motion, which was at once put to the meeting and unanimously adopted.

Mr. T. TYRRELL: I have now the pleasure to move that, agreeably to the recommendation in the report of the committee of management, a dividend be now declared for the last half year upon the company's capital at and after the rate of 4 per cent. per annum, and that the payment thereof, free of income-tax, be made at the offices of the company on the first Tuesday in November next. In moving this resolution, it is hardly necessary that I should make any observations. You will receive it, I am sure, with thanks to the committee, through whose exertions this increased return on the capital you have invested has been brought about. (Hear, hear.) I hope we shall go on and prosper, and that the efforts and care bestowed by the committee upon our affairs will enable them to give us still better dividends on future occasions.

Mr. HARDWICK seconded the motion, which was unanimously adopted.

Mr. HARDWICK: I have now the pleasing duty of proposing a resolution, which I am sure will not require a long speech from me to commend to your acceptance. It is, that the best thanks of this meeting be given to the chairman, deputy-chairman, and the committee of management, for their continued attention to the affairs of the company. (Hear, hear.) If the resolution required any remark from me to induce you to unite in its adoption, I need not do more than refer you to the admirable speech of the chairman this day as the best illustration I could offer to prove that both he and his colleagues are fully entitled to the best thanks of the proprietors for their exertions on behalf of the company. It is perfectly true that we have had to pass through some heavy storms, and it has only been through the able conduct of the pilots of the ship that we have been enabled to weather them. Still we have a great deal to look forward to, and a great deal of responsibility rests upon the directors of this company in time to come. That responsibility they have taken upon themselves with the greatest possible readiness, and they have devoted a large amount of attention to the business of the company, as I can state from having had occasion personally to consult with them several times. That we have profited by those exertions is shown in the very satisfactory statement which has this day been laid before us, and by the very much improved and improving condition of the company. (Hear, hear.) It is not, however, merely by their assiduity and attention at any moment, that the interests of the company are promoted; but there are other matters, as we learn from what has fallen from the chairman, which I feel to be very important. I would particularly refer to one, viz., the fact of the largely increasing consumption of gas in the metropolis. This has been brought about, I believe, not so much by the increased number of consumers as from the variety of experiments of lighting by gas which have been made within the last six months, which have proved eminently successful, and by reason of which a large quantity of gas has been consumed. The aid of science has been brought to bear in the application of gas for purposes in respect of which it has never previously been applied. Noblemen and gentlemen now find that their ball-rooms and drawing-rooms can, at a comparatively small expense, be lighted up by gas in a much more brilliant and effective manner than they formerly were by wax candles. Curiously enough, an instance just occurred to him, in which a large public room in the City of London was for the first time lighted up by gas the other day. The gas was of a perfectly beautiful quality, and afforded a most brilliant light in the hall, at a cost of something like 4s. or 5s., in contrast with the inferior light of wax candles, which hitherto had cost about £10. (Hear, hear.) I anticipate, therefore, great results from the introduction of gas in this manner, now that it is satisfactorily proved that it can be supplied free from all the defects and imperfections which formerly prevented its use for such purposes; and I feel not the least hesitation in saying that its effect will be to cause a very great increase in the consumption of this article. There is another matter also to which the chairman has referred, and which is a very important one, viz., that gas can now be produced at a much less cost than formerly—that is, that a smaller quantity of coal will produce a larger quantity of gas. This is owing, of course, to the numerous scientific experiments which have been made from time to time, of the results of which this company have availed themselves, so that I hope we shall not only continue to have the services of our excellent committee in promoting and protecting our interests, but that, by the development of science in this direction, we shall be able to produce yet greater results on behalf of the company than those which we have heard to-day, satisfactory though they are. I have much pleasure in proposing, and I do it very warmly and heartily, that the thanks of this meeting are due, and are cordially presented, to the chairman, deputy-chairman, and committee of management, for their untiring efforts to promote the prosperity of the company. (Cheers.)

Mr. J. R. LAVANCHY seconded the motion with much satisfaction, and felt that it did not require one word from him, after the excellent speech just made, to insure its hearty reception.

The motion was then put, and carried by acclamation.

The CHAIRMAN, in acknowledging the vote for himself, assured the proprietors that he was deeply sensible of their kindness, and of the trust and confidence they reposed in him and his colleagues, and that no effort should be wanting on his part to insure the still greater prosperity of the company. At their last meeting, the dividend declared was only 1½ per cent., which required £4500 to pay it, and left an undivided balance of profits of about £500. This half year they were dividing 2 per cent., which took £6000, or £1500 more than before, and would yet leave them an undivided balance of £3200. (Hear, hear.) He thought, therefore, that they might reasonably compliment one another on the altered position of their affairs. (Hear, hear.)

Mr. SANGSTER (deputy-chairman) said he had little to add to what had fallen from the chairman. There was an old saying, "when things are at the worst they are sure to mend;" and such seemed to be the case in reference to that company. Certainly the concern had been at a very low ebb,—they had been oppressed and persecuted, as well as prosecuted, and harassed in every possible way; but they appeared now to have got into smooth waters; and he hoped their future history would be one of prosperity and success. (Hear, hear.) If people out of doors would only leave them alone, the committee felt persuaded that on subsequent similar occasions to the present they would be able to give even a better account than they now did to the proprietors. It was to him very satisfactory, that, whereas two years ago they had only £4000 to bless themselves with, now they had upwards of £9000. He thanked the proprietors for their vote of confidence, and pledged himself that nothing should be wanting on his part to merit its continuance. (Cheers.)

Mr. COUSENS said, the directors were a bundle of sticks; and he believed there was no difference among them as to zeal and earnestness in the promotion of the welfare of the proprietors at large. Certain he was that they were alike grateful for the confidence reposed in them, and in their determination to devote their energies to the development and proper working of the affairs of the company.

Messrs. Hadland and Curling also briefly expressed their obligations to the meeting.

Mr. H. WALMSLEY said the proprietors used to receive their dividends in the first week in August, but now the payment of them had been fixed for the month of November, which made a difference to them of 1 per cent.

The CHAIRMAN said it would only be necessary to remind the honourable proprietor that by keeping the dividends in hand a little longer the committee were able to avoid borrowing money, which, perhaps, they would have to do at 6 per cent.

A vote of the thanks to the auditors for their services was then very cordially adopted on the motion of the CHAIRMAN, seconded by Mr. FENN.

Messrs. Lamb and Hadland briefly acknowledged the vote, and the proceedings terminated.

CHADWICK AND FROST'S NEW PISTON WATER-METER.

The following brief digest of the paper read by Mr. BENJAMIN FOTHERGILL, C.E., at the meeting of the Institution of Mechanical Engineers, held in Manchester, June 26, 1857, JOSEPH WHITWORTH, Esq., C.E., in the chair, is extracted from the *Manchester Examiner and Times*:—

"The paper next read was by Mr. BENJAMIN FOTHERGILL, 'On recent Improvements in Water-Meters.' The paper pointed out the necessity for an efficient measuring apparatus. The average price of gas might be taken at 4s. 6d. per 1000 cubic feet; but the price of water, at 1s. per 1000 gallons*, was 6s. 3d. per 1000 cubic feet. If it was, therefore, necessary to have meters for gas, it was equally necessary to have meters for water, which was dearer. Meters might be divided into low and high pressure. The best low pressure meters were those by Parkinson, of London, but they were in many respects unsatisfactory. The attention of engineers had been directed to obtain a correct and durable high pressure meter, capable of registering the quantity of water delivered, without lessening its pressure or velocity. High pressure meters had been classed as inferential and positive meters. The well-known inherent defect in all inferential meters in allowing small quantities of water to pass without registration, was an objection to such machines which no superiority of workmanship could remove. Taylor and Siemens', and Adamson's meters were the best of this class, yet they were not free from these defects. Of positive meters, or those which measured by capacity, many had recently been constructed on the principle of the diaphragm; but, in consequence of the impossibility of finding any flexible material sufficiently durable, they had not been brought into general use. The nearest approach to practical efficiency amongst those using flexible material was Chadwick's rotary meter; but although they registered correctly, they had not been found satisfactory in regard to durability. Several by other makers were liable to objection of unequal extension of the flexible material. Amongst the piston-meters were Kennedy's, Worthington's, Jopling's, and Chadwick and Frost's. In Kennedy's meter, the racked piston rod, and the use of Woodcock's patent rolling packet, were the distinguishing features. This meter was the best which had hitherto been brought into use; but there was some liability to stoppage, by the sticking of the tumbling-lever, when the valve was only partially closed, the water being then allowed to pass unregistered. There was also necessity for lubrication and packing, involving inspection. In Chadwick and Frost's piston-meter, the latest and most important improvements had been effected, and the difficulties connected with previous attempts appeared to have been satisfactorily solved by the invention or application of a compound fluid motive valve, actuated by the pressure of the water, but not concerned in the measurement. The meter, consisting of a cylinder and piston, with Woodcock's rolling packing, and other arrangements, was explained by the aid of diagrams. It was comparatively small in size, required no lubrication, had no tumbling weights, worked smoothly, allowed no leakage, and from an examination which he had made, he found it to register with a nearer approach to absolute correctness than any other. There was one at work in the adjoining room, and a larger one, constructed to measure 8000 gallons per hour, may be seen at work in the Water-Works' Yard, Town Hall, Salford, on applying to Mr. CHADWICK. Mr. Fothergill then remarked that he believed this to be the best meter at present produced, and if any one could invent a better, it would afford him pleasure to see it. The PRESIDENT inquired whether Mr. Fothergill had found any difference in drawing large and small quantities from it.—An answer was given in the negative. In answer to a question by Mr. FORSYTH as to how long it had been in operation, it was replied about three months. Mr. CHADWICK remarked that it had only been patented a few months, and was brought forward earlier than was intended. After giving seven years' attention to the subject of water-meters, he was acquainted with the difficulties, and knew that a large amount of durability was requisite in every part. There was a great want of a perfect meter, and he thought this one would prove to be free from some of the defects which had been referred to, and be economical in construction. A vote of thanks was accorded to Mr. Fothergill for his paper."

SCREW COLLIERS AND THE COAL TRADE.—The passage down the lower reaches of the Tyne on Monday of the large screw collier, the *William Corey*, on an experimental trip to sea, attracted general attention, and caused much speculation among seafaring men; for, if the experiment succeeds of running such a large class of vessels in the coal trade at a profit, the prediction made a few years ago, that in a very short period of time sailing vessels would be superseded in the London coal trade by iron screw steamers, will be a matter of certainty, as the *William Corey* bears the same relation to the present class of screw colliers as they do to collier brigs. The *William Corey* is the pioneer of a fleet of large screw colliers, intended to run between

* The price of water in London is limited to 6d. per 1000 gallons by the Metropolis Water Acts.

Cardiff and London, to supply the market with Welsh steam coal. She is owned by Mr. Hugh Taylor, of Backworth; Mr. William Corey, of London; Mr. John Nixon, of Cardiff; and other gentlemen well known on the Coal-Exchange. It is but a few years since the first steam collier was launched, and the average cargo carried by these vessels does not exceed 600 tons, with engines of about 60-horse power. The *William Corey* is intended to carry a cargo of 1500 tons, exclusive of 150 tons of fuel, and she has engines of 120-horse power. The iron hull of this vessel is so constructed that 400 tons of water can be admitted into her bottom, to act as ballast, a large and efficient steam pump being also provided to discharge this water within three hours, thus avoiding any detention in port to discharge ballast. She is of immense strength, which may be inferred from the fact that when she is laden she will weigh 3000 tons; and it is estimated that she will deliver into the port of London during one year the enormous quantity of 50,000 tons of Welsh coal. Hydraulic machinery has been erected in the Victoria Docks for the entire discharge of her cargo in 16 hours. The chairman of the coal trade of Northumberland and Durham, with a large party connected with mining in the north, was on board during the experimental trip on Monday, which was to the Coquet and back to Shields bar. At luncheon some interesting statements were made with regard to this class of vessels. Mr. Taylor said that he and his partners had built this vessel with no view to run down sailing vessels, but to maintain the competition with railways in the London market; and he had little doubt that in a short time, if the experiment succeeded, he and his partners would give the builders, Messrs. Mitchell and Co., of Low Walker, an order for a vessel double the size; for he had no hesitation in saying that, in four or five years' time, steam-vessels carrying from 3000 to 5000 tons of coal would be employed in the coal trade; for, as they saw, the *William Corey* was worked with as few hands as a vessel of much lower tonnage. We learnt on board that the owners anticipate to sail the vessel at about 3s. 6d. per ton, and that a vessel twice her size could be sailed at 2s. per ton; of this the owners are perfectly satisfied. She has 23 hands on board, and has been built and finished for sea at a cost of something like £23,000. She is an exceedingly handsome looking vessel, close and compact, as iron vessels generally are. She is of great length, longer than the *Duke of Wellington;* and with a stiff breeze on the beam made something more than eight knots an hour on her trial trip. The ship and machinery, the latter made by Messrs. Hawthorn, of this town, have been built under the superintendence of Mr. J. F. Spencer, of Brighton.

Presentation of Address to C. B. Robinson, Esq., of Leicester.—On Thursday evening, the 2nd inst., the workmen of the Messrs. Robinson, with their wives and children, were entertained at dinner and tea at the gas-works, on the occasion of Mr. C. B. Robinson retiring from the lesseeship of the Leicester Gas-Works. Two large sheds were very tastefully decorated with evergreens and flowers, and hung with banners suitably inscribed. The entrance was surmounted with the crown and "V. R.," brilliantly lighted with gas, and altogether there was presented a scene of lively animation. About half-past seven o'clock the arrival of Mr. and Mrs. Robinson and friends was announced by the firing of guns, and the air shook with cheers from 110 voices. Mr. Chambers, the foreman, then read the following address, and handed it to Mr. Robinson, who replied in very happy and friendly terms:—"To C. B. Robinson, Esq. Respected and esteemed employer,—After a long and honoured connexion with this establishment, you are about to withdraw from its active management. You have, by labour and practical wisdom, by sustained and indefatigable exertions, raised these works to a position of high respectability, and have so suitably accommodated them to the wants of an increasing population, as to command the approbation of all who have seen them. To such as knew this station in its infancy, the change that has passed, the additions, extensions, and improvements which have been made, must appear very striking indeed, since they are subjects of remark to those whose knowledge of them extends only over a few short years. We congratulate you, respected sir, on the great success which has attended your efforts in this sphere, and the benefit which has therewith been conferred on the public. But we have other reasons, respected sir, on which to offer you our sincere congratulations—reasons which more nearly touch ourselves, since we have shared more largely than the public in the benefits of which we are about to speak. We have experienced at your hands, some of us for a long series of years, the utmost kindness and the most considerate treatment. We have ever been cheered by your presence, and felt that in you we had a friend and well-wisher. Your conduct has been such as to make us think more highly of ourselves and more favourably of our kind. While many employers there be whose acts gain a greater publicity, and attain a wider fame, from the facility with which they reach the public ear, none, we are sure, occupy a warmer place in the hears of their employed. We tender you, dear sir, our warmest thanks for all your kindness; we join in wishing yourself and Mrs. Robinson prolonged life and continued health; we follow you with most fervent desires for your personal, domestic, and social happiness; and trust that a like success may attend the career of your respected brother.—On behalf of the employed, Richard Chambers, Foreman." Mr. Robinson has been appointed one of the borough magistrates, and taken his seat on the bench.

Wide Estimates.—The following is a list of the tenders for a gasholder 60 feet in diameter and 20 feet deep, to be erected at Ryde, Isle of Wight, according to the plans and specifications of Mr. Alfred Penny, engineer, London, whose estimate was £765:—

Mr. Llewellyn, King's Arms Yard	£1616	0	0 (!)
Mr. W. Lowe, Dudley	877	0	0
Mr. Kirkham, Battersea	818	12	0
Mr. J. H. Jones, Poets' Corner	740	0	0
Messrs. J. and W. Horton, Smethwick	720	0	0
Messrs. Whitehouse and Co., West Bromwich (*accepted*)	720	0	0
Messrs. Price and Baker, Dudley	596	0	0

The last-named firm would not be bound as to time for completion, and their tender was, consequently, not taken into consideration.

Messrs. Chasemore and Watney's Action against the Croydon Local Board of Health.—The award of the arbitrator has been made deciding all matters, except the alleged abstraction of water; and we suppose it will therefore be laid before the local board at their next meeting. Mr. Chasemore has had various sums awarded to him for different heads of claim, some being disallowed. His total claim amounted to £5179 17s. 4d. The aggregate sum awarded to him is £850, to be paid within a month, and £100 more to be paid when, and as, the arbitrator may hereafter appoint. Mr. Watney estimated his damage, under several heads, at £3750, and the arbitrator has disallowed them all, except one, and on that one has awarded him 40s. The question of costs is reserved until the water question shall be finally decided in the House of Lords.

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75, OLD BROAD STREET, LONDON,

Having applications for New and Second-hand Gas Apparatus, would be obliged by those Companies having Apparatus to dispose of, to send particulars. And Companies requiring Apparatus are solicited to apply.

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A large stock of Fire-Clay Goods always on hand in London, at the lowest wharf prices, at Messrs. Christie and Co.'s Wharf, 64, Bankside, Southwark.

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JAMES FERGUSON and CO., Lessees of the Auchinheath and Craignethan Gas Coal-fields (the most extensive and valuable in the parish of Lesmahago), respectfully intimate to the Managers of Gas Works and Consumers of Gas Coal, that he is prepared to ship the best quality of the above well-known COALS at Glasgow or Leith; and also to deliver them at the railway stations upon, or connected with, the Caledonian Railway, to any extent which may be required.

Price, free on board, or delivered at the railway stations, may be learned by addressing James Ferguson and Co., Gas-Coal Works, Lesmahago; or J. H. Jones, 1, Poets'-corner, Westminster, sole Agent for London.

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JAMES LYNE HANCOCK'S Vulcanized Indiarubber Hose Pipes and Tubing. Manufactory (and Warehouse), Goswell-mews, Goswell-road, London.

Gas Companies, Engineers, Gas Fitters, and the Trade generally, are respectfully informed this Tubing is now manufactured to any size, from ¼ inch bore and upwards, in 100-feet lengths, and perfectly cylindrical, either with or without a spiral wire inside.

VULCANIZED GLAZED FLEXIBLE TUBING, from ¼ inch up to 1 inch diameter, made in 24-feet lengths; or, covered with silk or worsted, up to 100 feet.

VULCANIZED HOSE, for FIRE ENGINES, BREWERS' USE, and for standing great pressures, (Rubber and Cloth combined), made to any length or size to fit the necessary screws, &c.

VULCANIZED INDIARUBBER AIR-TIGHT BAGS, made any size, for Gas Mains, with flexible tubes attached, and fitted with stopcocks complete.

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He would call the attention of Gas Managers to the importance of converting their comparatively unsaleable "Ammoniacal Liquor" into an article easily disposed of.

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PURIFIERS, CONDENSERS, and SCRUBBERS erected complete, or the materials supplied; with every description of goods in use by Gas Works, in stock, on wholesale prices, at

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The Bank of England is fitted entirely with these Valves, from the smallest branch to the largest main pipe.

The following, among numerous testimonials, will be found very satisfactory:—

"The British Gaslight Company's Office, No. 105, Broad-street, Ratcliff, London, June 10, 1846.

"Gentlemen,—In reply to your inquiry, I have to state that 'Carter's Patent Gas Valve' has been used by this company and by the fitters of the district extensively for seven years past. It was adopted to obviate the inconvenience of setting fast, so prevalent with the conical metal plug-cocks, and has been found to answer the purpose intended.

"I have recommended its use in several provincial towns with which I am professionally connected, and have not received any complaint of its having failed in any respect of performing satisfactorily all that is required of it.—I am, gentlemen, yours respectfully,

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"Messrs. Lambert and Son, Lambeth."

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J. V. has introduced a coating or lining of the above metal in the Outer Case, Valve-box, Inlet-pipe, &c., thereby rendering the whole as durable as the Drum, as not a particle of tin plate is exposed to the action of either water or gas; and preventing the possibility of gas passing above the water line through the front into the body of the Case to the outlet unregistered, which frequently occurs. When the Meter has been in use for any length of time it is generally found that rust or decay takes place *above* rather than under the water line, which is only discovered when they need repair. Also the Inlet-pipe and Valve-box are generally found quite decayed, which cannot happen in the above improvement.

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The most strict attention is given to the workmanship as well as the registration of every Meter, to render them perfectly accurate.

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Meters sent at the lowest London prices.

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THOMAS PALETHORPE, Esq., 7, Hereford Street, Park Lane, London.
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It is clearly ascertained that large profits can be obtained by English capitalists from supplying the demand for gas now existing in the cities and towns referred to; and that the demand will steadily and rapidly increase may safely be inferred from the results of its introduction into other places. The advantages derived from a systematic economy in the superintendence of several distinct works by a staff of officers not greatly exceeding in number or expense the staff necessary for managing one, and the highly remunerative prices obtained on the continent for gas and gas-fittings, will, it is believed, secure to the Shareholders of the proposed Company dividends of from 10 to 20 per cent. upon the capital invested.

A concession has already been accepted by the Company from the Dutch Government and the Municipal Authorities of Harlingen, securing to the Company the exclusive right of supplying gas to the town at an estimated price of 7s. 6d. per 1000 cubic feet for public lights; for private lights the price may be fixed by the Company. The public lights alone are estimated to yield a fair dividend on the gross capital to be employed on this concession. The works at Harlingen are nearly completed, and the applications for gas supply prove larger than was anticipated.

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improvements he has made in the Wet Meter, and which he has secured by her Majesty's Royal Letters Patent, the accuracy of their registry is rendered certain by the introduction of the adjusting slide and hydraulic, whereby a Perfect Water Level is readily obtained, and the Hydraulic precludes the possibility of abstracting water from the meter by increased pressure or otherwise, thus surmounting the great desideratum of the Wet Meter. In his Patent Equitable Gas Meter neatness and strength are combined, the backs and fronts of the case being stamped by powerful machinery out of thick plate iron (tinned or galvanized); and the internal construction is of the best metal, which will resist the action of any impurity in the gas.

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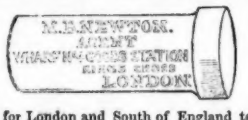

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ING for Steam-Engines, Pistons, Piston-Rod Stuffing-Boxes, Pumps, &c.—Notice is hereby given that a perpetual Injunction of the High Court of Chancery has been obtained by Messrs. OASTLER and PALMER, trading under the Firm of ALEX. ROSS and CO., Grange Mills, Bermondsey, against Messrs. LITTLE and CHAMBERS, of Manchester, to restrain them from further infringing the above Patent; and that the above Packing can only be obtained of Messrs. ALEX. ROSS and CO., Grange Mills, Bermondsey, LONDON (the Proprietors of the Patent), or by their authorised Agents.

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one of which answers the purpose of THREE ordinary Valves, in connecting Purifiers, or in shutting off and passing a Station-Meter, or other apparatus. Also his

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by which any number of Retorts, up to Twenty, can be heated by one Coke and one Tar Fire, reducing the fuel account in many instances to one-half of what it now is, and without the production of any smoke.

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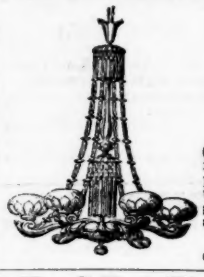

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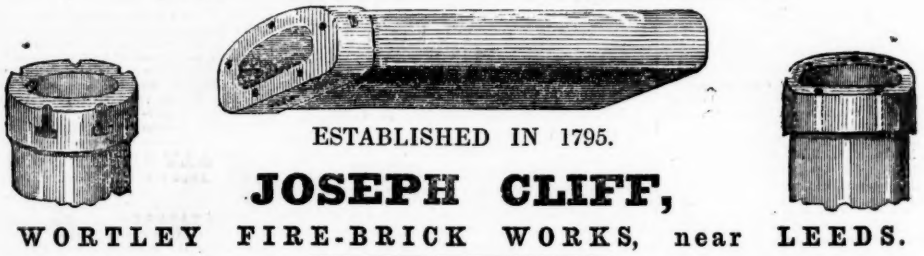

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